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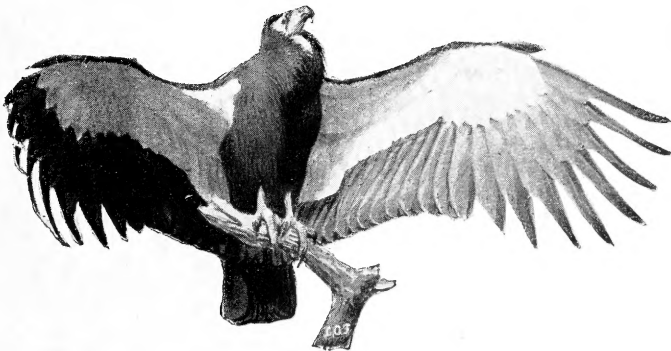
THE CONDOR
A MAGAZINE OF
WESTERN ORNITHOLOGY.



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Volume IX
1907



Published Bi-Monthly
by the
Cooper Ornithological Club of California
Pasadena, California

204300

THE CONDOR

A Magazine of Western
Ornithology



Volume IX

January-February, 1907

Number 1



COOPER ORNITHOLOGICAL CLUB

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Entered as second-class matter May 4, 1906, at the post office at Pasadena, California,
under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, 871 No. Lake Ave., Pasadena, Cal.

All Membership Dues

FOR 1907, \$2.00

AND SUBSCRIPTIONS TO

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COLORADO MAGPIES THREE WEEKS OLD

Photographed by E. R. Warren

THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



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PHOTOGRAPHING MAGPIES

BY EDWARD R. WARREN

IN many parts of the West the conglomeration of sticks and twigs, which a magpie gathers for a nest, is a conspicuous object in the trees and bushes along the streams and elsewhere. Rude and shapeless as they look when viewed from the outside, they are really comfortable homes; for inside the mass of sticks is built a nest cavity of mud, lined with fine rootlets, and overhead is a roof of twigs, with the entrance usually on the side, tho one occasionally runs across a nest with little or no roof. The cavity is often eight to ten inches deep. The nest shown in the picture is not the one in which the young birds lived; that was in a clump of willows so thick that the nest would not photograph well. These nests are used for several seasons: The one in which my family lived was occupied for at least three summers, and in the winter of 1900-01 was partly destroyed by storms and the weight of the snow; in the spring of 1901 a new nest was built in an adjoining clump.

The nests of *Pica pica hudsonica* are anywhere from ten to forty feet above the ground; but I think between ten and twenty feet will cover three-fourths of the cases. The one in the cut showing eight eggs was very exceptional, not much over three feet from the ground to the front door: just a nice height for photographic purposes. I promised myself a nice series of pictures of the young birds from that nest; but when I thought the time had come for them to be sitting up and taking notice, and went there with the camera, I found someone else had also taken notice and the nest was empty.

The family of young birds whose pictures I did take were in a nest near Crested Butte, Colorado, and, as luck would have it, I found them the very day they hatched, so that their ages were known exactly. That was on the 27th day of May, 1900. It was my first season at photographing young birds and I tried some impossibilities in the way of attempts at pictures in the nest. The picture taken at thirteen days old, tho poor, shows their growth from the naked natal condition during that time. At 18 days they had advanced still more, and another three days showed an astonishing progress; for on the twenty-first day I had my

hands full to get the picture, the youngsters being most decidedly lively, and keeping me busy replacing them as they hopped off the perch. This, one or more was sure to do when I thought I had them all right and turned toward the camera. But patience was finally rewarded.

Learning by experience, when I went to take the four weeks old picture I enlisted the aid of the two young daughters of the friend on whose ranch the nest was situated. On going to the nest the family of magpies were all in the branches outside. They could not quite fly, but could, and did, hop around in a most exasperating manner. One could not be caught, and we were forced to be content



MAGPIE'S NEST IN COTTONWOOD TREE

with five. This number, however, proved sufficient to give us all the trouble in posing we really needed. This day was the first when the old birds had manifested the least anxiety while the photographer was at work. Usually the parents, if about, flew away silently at my approach and disappeared. But this time they were in the neighborhood all the time, screaming loudly, as if to tell us they had raised their family successfully so far and did not wish them interfered with.

I went again a week later and found the youngsters taking short flights. Thanks to experimenting with a new and untried lens not a single picture was secured. But one is given herewith of a bird seemingly about the same age, and



INTERIOR OF MAGPIE'S NEST



MAGPIE NESTLINGS 13 DAYS OLD



MAGPIES, 18 DAYS OLD

evidently, from his actions and those of his mother (or father), just out of the nest.

I have never been successful in taking a really good picture of an adult magpie: they are too cute, tho if one could find a tame specimen in good condition it could, of course, be done readily. They are quite easily tamed if taken young, and often learn to speak a few words more or less distinctly, but they need a large cage, and most of those one sees in captivity look rather miserable.



MAGPIES, FOUR WEEKS OLD



YOUNG MAGPIE, JUST OUT OF NEST
ABOUT FIVE WEEKS OLD

As in the case of other members of the crow and jay family, there is a difference of opinion as to the value of magpies to man. No doubt they eat many insects, carrion, and very likely a few mice; but they eat eggs and young of other smaller birds, steal more or less grain, and I have heard them accused of picking at sores on the backs of horses, burros and cattle, and doing considerable harm in that manner.

Colorado Springs, Colorado.

MAGPIES ON THE LA PLATA

BY M. FRENCH GILMAN

THE La Plata River is a small stream in southwestern Colorado, much like our southern California rivers. It flows into the San Juan, a tributary of the mighty Colorado. The growth in the river bottom and on the adjacent banks seems to form a magpie's paradise, judging from the numbers of these birds and their old nests. Beginning where the stream issues from the La Plata Mountains, near the mining town of Hesperus, on down the river for about ten miles, the birds fairly swarm. They are found in smaller numbers along the stream to its junction with the San Juan and then down that river as far as I have been: Shiprock, New Mexico.

The center of the population—*Pica pica hudsonica* population—seems to be near the Fort Lewis Indian School, in La Plata County. Here the river bottom widens and is covered with a dense growth of narrow-leaf cottonwood (*Populus angustifolia*), black birch (*Betula occidentalis*), paper-leaf alder (*Alnus tenuifolia*), two kinds of willow, a few aspens (*Populus tremuloides*), some scattering pines (*Pinus flexilis*), and the usual undergrowth of such altitudes, 7,500 to 8,120 feet.

On one side of the river is a mesa covered with scrub oak (*Quercus undulata*

and *Quercus u. gambeli*) which gives way to piñon (*Pinus edulis*) and juniper (*Juniperus occidentalis*) further down the river; while on the other side the mesa supports a growth of *Pinus flexilis* which in turn gives way to the piñon and juniper, with some scrub oak in the neutral zone.

This environment and an apparent immunity from the small boy and the gunner makes a condition very favorable to the study of the magpie. Where not disturbed these birds become quite tame and display a familiarity which borders on contempt. On the Fort Lewis school grounds no one is allowed to molest them and they dispute the kitchen scraps with the chickens and cats. For a time I cut all the meat used in the school and the magpies would be on hand every morning at the meat house for the waste pieces of meat, fat and bone. They would drive away the kittens but were more foxy with the old cats, one bird attracting the feline attention while another annexed the meat. They were rather familiar about the government kitchen and showed decided affection for the garbage barrel. When the pigs were fed was their opportunity. One morning when the snow was three feet deep on the level and the thermometer twelve degrees minus, I counted over one hundred of the birds at, on and in the pig pen. The pigs were too busy to resent their presence and some carried from one to three of the birds about on their backs—a convenient footwarmer for the magpies! All winter the pig pen was a rendezvous for from 75 to 125 of the birds and a few were on hand for meals during spring and summer tho most of them had then scattered along the river for nesting.

A peculiar feature of their actions was a decided knowledge of the "dead line" and a fair idea of the range of a shotgun. Inside of the school grounds they were tame and confiding, allowing me to approach within a few yards of them. But outside they were *bronco* and kept about 75 or 100 yards in the lead. I wished to secure a few specimens but of course respected the ground rules and also the birds' apparent trust in mankind. But out of bounds it was every bird for himself, and even then it was sometime before a specimen was secured. This, of course, was before the nesting season. When that opened the birds became more approachable, especially as they saw I did not molest them.

The first nest of the season was found March 28, about half completed, I judged. A week later it was full of snow. On March 31, I saw two more about as far advanced in construction as the first. The birds seemed to take their time in building, tho perhaps the frequent snows at that time interrupted their work. For on April 28, the nest I found just a month before contained seven eggs slightly incubated. The earliest instance of building was a nest with one egg on April 8, which nest had a complete set of eight eggs, April 15. During the latter half of April and the whole of May, I examined at least thirty nests. I found that the earlier sets were largest, most of them containing eight eggs. Five of the seven nests inspected in April had eight eggs, while two had seven each. Most of the nests examined during the first half of May contained seven eggs. Of nests observed after May 15, several had six eggs, two had five, and one contained four eggs: all complete sets.

Nesting places varied, many of the birds building homes in big pine trees on the mesa, but the majority of nests were placed in the narrow-leaf cottonwoods along the river bottom. A few built in scrub oaks, some in willows, and others in black birches. The height from the ground at which the nests were built varied from four to sixty feet; sixteen or eighteen feet was a fair average for the nests examined. Nests built in pines were generally highest and those in willows low-

est, tho I found one against the trunk of a cottonwood only five feet from the ground, while the tree was at least fifty feet tall. Nests in willows, oaks and birches were nearest the ground. The high nests were those in trees located along a highway, or in a lone tree on the mesa or in a clearing. The low nests were nearly always in trees or shrubs in a thicket, or else in wet marshy ground, hard to get at. The nest only four feet high was in a willow that stood on a tiny marshy island in a pool of stagnant water. One, five feet high, was in a willow on very boggy ground, with stagnant pools on three sides of it. One exception was a nest six feet from the ground in a cottonwood tree alongside of a much used wood road. But as this nest had only four eggs, the parents were probably not very particular whether their family matured or not. But it did, and made a safe get-away in spite of the low and exposed situation.

The birds did not seem very shy while building, and were rather in evidence when the nest contained eggs. But when the eggs were hatched! The old birds would come and perch on a branch just over my head or at one side barely beyond arm's length and tell me what they thought of me. And the way they swore at me was something fierce—if it was *not* swearing I'm no judge of profanity! Several times a bird only four feet from my head would savagely peck the branch on which he, or she, perhaps, sat, all the while muttering various kinds of threats. And if I picked up a young one their wrath was beyond expression. They would call in all the neighbors within a radius of half a mile to help make "war medicine."

The nests varied but little in material or manner of construction, all having the well-defined arch of twigs over the nest and the entrance at one side. Sometimes the arch was well connected with the nest proper, allowing insertion of the hand only at the entrance; while with other nests the hand could be thrust thru the "siding" quite easily. There seemed quite a difference in the size of nests and amount of material used. Some were large and well built, the walls being quite firm and the arch so dense that such nests had remained intact for a long time. Others were small, and quite frail and flimsy, particularly the superstructure—contract work, I presume! I noticed that the earlier nests were the well built ones while the late ones were inferior. I do not mean to say that all the late ones were inferior, but all the inferior ones were late. I think the birds build anew each year, as I saw no repairing done and all nests occupied were new ones. The great number of old nests in a good state of preservation made much work in examining; as often, until I attained some degree of expertness, I would climb up a difficult tree and find the nest to be a last year's one. Twice I was rewarded, however, as the old nest was occupied by long-eared owls. All the nests had thick plastered walls, well lined with rootlets and horsehair. It is a puzzle to me where the birds find so many rootlets when the ground is covered with snow.

The eggs were nearly uniform in size, coloring and markings, and seemed quite small for a bird of the magpie's dimensions. They greatly resemble the eggs of the Brewer blackbird, and also those of the California crow, in color and marking, and are between the two in size—nearer the blackbird, tho. Of the great number of eggs examined I found but one infertile, and only one with the heavier markings at the small end, "bald-headed eggs" the boys call them.

The magpies, with their striking black and white coloration, are a feature of the landscape, or, rather, "snowscape," as it might well be called, for about half the year. A southern Californian's involuntary thought on first sight of the

birds in flight is, "What large phainopeplas!" Their coloring from a distance appears alike, and their method of slow, dignified flight is quite similar. I speak of black and white plumage, but the black of *Pica pica hudsonica* is much mixed with a bronze green.

As far as I am able to judge by observation, the birds are beneficial, not only destroying injurious insects but acting as scavengers as well. Last summer the "grasshopper became a burden" and it was gratifying to see fifteen or twenty large families of magpies and as many Brewer blackbirds in the alfalfa fields all catching the hoppers.

Breen, La Plata County, Colorado.

AMONG THE GULLS ON KLAMATH LAKE

BY WILLIAM L. FINLEY

WITH PHOTOGRAPHS BY HERMAN T. BOHLMAN

THE lake region of southern Oregon is perhaps the most extensive breeding ground in the West for all kinds of inland water birds. The country is overspread with great lakes, several of them from twenty to thirty miles across; and reaching out on all sides of these are vast marsh areas and tule fields extending for miles and miles.

The latter part of May, 1905, we set out to study and photograph the bird life of this region. For several days we packed thru the mountains with our heavy camera equipment, and then across a rolling, sage-brush country till we reached Lost River, which empties into Tule or Rhett Lake. Here we abandoned our horses for a stout rowboat, and then for over a month we cruised about Tule Lake, crossed over to White Lake and out into the Lower Klamath.

Tule Lake is a body of water about twenty-five miles long and fifteen to twenty miles wide, cut thru the northern half by the Oregon and California boundary line. A few miles to the northwest is Lower Klamath Lake, about the same size. Between these two larger lakes is a smaller body of water called White Lake, separated from the Lower Klamath by a broad strip of tule land.

The border of these lakes is a veritable jungle. The tules grow in an impenetrable mass from ten to fifteen feet high, and one can never get to a point where he can look out above the tops of the reeds and see where he is going. Then the foundation below is made of decayed vegetation and is treacherous to tread upon. One may wade along in two feet of water a short distance and sink over his head at the next step. We found a few places where the solid roots had formed a sort of a floor at the surface of the water, which was buoyant enough to support us. These precarious footholds were the only camping spots we had for two weeks.

In Lower Klamath Lake stretching for miles and miles to the west is a seemingly endless area of floating tule "islands," between which flow a network of narrow channels. These so-called islands are composed of the decayed growth of generations of tules. Most of them are soft and springy, and sink under the weight of a person.

Gulls love society. They always nest in colonies and live together the entire year. They are most useful birds about the water-fronts of our cities. These gulls have developed certain traits that mark them as land birds rather than birds of the sea. In southern California and Oregon I have watched flocks of them leave the ocean and rivers at daybreak every morning and sail inland for miles,

skirmishing about the country to pick up a living in the fields, following the plow all day long as blackbirds do, and fighting at the farmer's heels for angle worms. I have seen others rummage daily about pig-pens and gorge on the offal thrown out from the slaughter-houses. If any bird is useful to man, the gull is certainly of economic importance as a scavenger.

It was several days before we found the colony of nesting gulls, California and ring-billed (*Larus californicus* and *L. delawarensis*), on Lower Klamath Lake. We were led to the place by watching the course of the small flocks that spread out over the lake in the morning and returned homeward about dusk each evening. From a full mile away, with our field glass, we could see the gulls rising and circling over the low-lying islands. As we rowed nearer, the birds came out to



CALIFORNIA AND RING-BILLED GULLS OVER ROOKERY ON LOWER KLAMATH LAKE, OREGON; 283 BIRDS IN THIS VIEW

meet us, cackling excitedly at the dubious-looking craft approaching so near their homes. They swam about on all sides, curiously following in the wake of our boat. Cormorants flapped along over the surface, pelicans rose heavily from the water, and gulls and terns got thicker and thicker, until when the nose of the boat pushed in at the edge of the island, the air seemed completely filled with a crying, chaotic swarm. We stepped out among the reeds, but had to tread cautiously to keep from breaking eggs or killing young birds. Many youngsters crouched low in their tracks and others scudded off in all directions. Our presence caused such confusion among old and young that we jumped in the boat again and pulled away for fifty yards.

We wanted the opportunity of making an intimate study of the home life of

the gull, but unless in some way we could hide near at hand this was simply impossible, for the whole colony of birds went frantic whenever we approached their nests and young. To overcome this difficulty, we had brought a blind, specially built for the purpose. We had secured an old wagon umbrella of dark-green color. Then taking a long piece of green canvas, we had sewed hooks along the edge about eighteen inches apart, and when these were hooked in at the end of each rib, we had the sides hanging down all around, making a covered tent, in which we could hide with our cameras.

The next morning we pulled down below the gull colony and landed under cover of the high tules. Here we erected the blind and got underneath with our cameras. Then, holding up the umbrella, we began slowly edging toward the rookery. It is hard to say just what the gulls thought this queer-looking object was; they could see no legs, no head, but still it moved. Whereas the day before they had gone wild at our approach, now they paid little attention to the green thing that blended fairly well with the green tules, even tho it gradually approached closer and closer. After maneuvering for almost an hour, we reached



COLONY OF RING-BILLED AND CALIFORNIA GULLS ON TULE ISLAND
IN LOWER KLAMATH LAKE

the edge of the colony and planted our blind by driving the extension handle of the umbrella into the mud. Some of the parents regarded the green tent with suspicion, backing off or rising to circle around where they could get a full view. But it was not long before the blind seemed to pass as part of the scenery and we were surrounded on all sides by the snow-plumaged birds coming and going, and paying little or no attention to us as we peered out or pointed our cameras thru the loop-holes we cut in the canvas.

Altho there were at least five hundred pairs of gulls nesting so close together, yet housekeeping was in no sense a communal matter. The nests were within two or three feet of each other, but each pair of gulls had its own home spot and the invasion of that place by any other gull was the challenge for a fight. Several times we were the excited spectators of fights that were going on just outside our tent. I watched one old hen, who was very angry because she couldn't find her chicks. As one of her neighbors lit near, she grabbed the tail of the intruder and gave it a sharp jerk. At that both birds grasped each other by the bill and a lively set-to followed. They pulled and tugged till suddenly the old hen let go and



ADULT AND YOUNG CALIFORNIA GULLS
PHOTOGRAPHED FROM BLIND

grabbed her opponent by the neck and began shaking and hanging on with all the tenacity of a bull pup, till the intruder got enough and departed, leaving the victor with a mouthful of feathers.

Almost all the eggs had hatched and some of the young gulls were about grown. By watching the actions of the parents, I soon discovered that their greatest anxiety seemed to be to keep their children crouching low in the nest so they would not run away and get lost in the crowd. I saw one young gull start to run off thru the reeds, but he hadn't gone a yard before the mother dived at him with a blow that sent him rolling. He got up dazed and started off in a new direction, but she rapped him again on the head till he was glad to crouch down in the dry reeds.

The parents seemed to recognize their own chicks largely by location. Several

times I saw old birds pounce upon youngsters that were running about, and beat them unmercifully. It seemed to be as much the duty of a gull mother to beat her neighbor's children, if they didn't stay home, as to whip her own if they moved out of the nest, but often this would lead to a rough and tumble fight among the old birds. Sometimes a young gull would start to swim off in the water, but it never went far before it was pounced upon and driven back shoreward.

Altho we had an excellent chance to study gull life from our blind, yet we found little pleasure in it at the time. The sun was pelting hot and there was not the faintest movement in the sultry atmosphere. We had to breathe the foulest kind of air on account of the dead birds and decaying fish scattered about, and we were standing in a muck that was continually miring deeper. Swarms of flies and

mosquitoes harassed us constantly, while the perspiration kept dripping from our bodies, till, after three or four hours in the blind, our tongues were parched from thirst, and with loss of strength and patience, we were compelled to quit for the day. But for all we suffered there was a fascination in watching these wild birds going and coming fearlessly almost within arm's reach. For three different days we worked in the blind trying to picture the gulls in their characteristic attitudes of flight.

These gulls are masters in the air. I have watched by the hour birds similar to these following along in the wake of a steamer, but had never before had such chances with a camera. Often they poise, resting apparently motionless on outstretched wings. It is a difficult feat. A small bird can't do it. A sparrow hawk can only poise by the rapid beating of his wings. The gull seems to hang perfectly still; yet there is never an instant when the wings and tail are not constantly adjusted to meet the different air currents. Just as in shooting the rapids in a canoe, the paddle must be adjusted every moment to meet the different eddies, currents and whirlpools, and it is never the same in two different instants. A gull by the perfect adjustment of its body, without a single flap of the wings, makes headway straight in the teeth of the wind. I saw one retain a perfect equilibrium in a stiff breeze, and at the same time reach forward and scratch his ear.

Even tho we had good chances to picture the flying gulls, yet wing-shooting with a camera is such a difficult feat, that several dozen plates yielded but few good negatives. The short interval of time during which it takes a flying bird to sweep across the angle of vision of the lens generally gives the photographer only part of a second's time to aim, focus and shoot. A flight picture well focused and clear and satisfactory in its make-up is the record of a rare shot and a great many misses; perhaps it is more often a good guess, but it is rarely if ever made without a great deal of practice.

Portland, Oregon.

EXPERIENCES WITH THE DOTTED CANYON WREN

BY WRIGHT M. PIERCE

I T was the latter part of June, several years ago, that I happened to be on a camping trip over in Coldwater Canyon, which is situated at the headwaters of the San Gabriel and which leads into Cattle Canyon, a branch of the right fork of the San Gabriel. Near the head of this beautiful Coldwater Canyon we found a cabin, which was badly worn by the weather and rough treatment that it had received at the hands of campers. Here in this cabin, the sides of which were made of logs with wide cracks between them, we made camp. The few rough shakes which served as a roof would afford poor shelter from either rain or sun. This cabin is typical of the old miners' cabins which one comes across when traveling thru the mountain wilds of southern California; but within I found a little home that would not, I believe, be called typical of miners' cabins.

This home was in an old dry-goods box which was suspended from the ceiling by baling wire. The box had evidently been used previously by campers as a

cupboard. Even tho it was open on one side it was pretty safe from the rats, suspended as it was from the ceiling.

As soon as I discovered the nest I told the rest of the party not to disturb the box or its occupants so as to give me a chance to identify the owners, as well as to study their actions. After a few moment's waiting I heard the shrill whistle or song of the dotted canyon wren (*Catherpes mexicanus punctulatus*) near the cabin. Almost immediately afterward the female wren appeared, carrying an insect in her beak with which to feed the four small hungry nestlings in the nest in the box. At first she seemed frightened at me, approaching the box only with the utmost caution, but after we had been in camp a few days she became accustomed to our presence and noise, and would enter the box even tho we were quite near. Both the male and female assisted in feeding the young. At night the female brooded the nest. I discovered this by taking a light and looking at her thru a crack in the box. She seemed frightened at the light but only blinked and crouched lower in the nest, as if to better protect her small babies.

I would have the nest in my possession now but for a misfortune that overtook it. After placing a small can lined with cotton in place of the nest, and after putting the youngsters in their new home, I laid the nest out intending to pack it at once. But for the time I forgot that mountain cabins are infested with rats. This fact was sharply impressed upon me when in the morning I went to get the nest; for there only remained the tattered remnants of a once beautiful structure. The rats in this camp, as I found out later, have been credited, and I do not believe falsely, with mysteriously carrying off everything that they can get at, even sides of bacon, boxes of crackers, and sacks of potatoes!

But to return to the nest: As I remember it, the top part resembled very much a wood pewee's in form and color, tho in size it was a little larger and deeper. The lower part was a great mass of coarse sticks, such as are always found in the nests of the wren family. The upper part was composed of fine grass, weeds, weed bark, and weed stems, covered over with an abundance of soft light-colored mosses and lichens. The lining was of soft feathers, a little hair, and a few soft weed fibers and the ever present piece of dried snake skin, which is nearly always found in the nests of the wren family. The inside diameter was about two and one-half inches, the inside depth about two inches. The outside diameter was about four inches and the outside depth, taking into consideration the mass of sticks, about five inches. All the upper part was very compactly and firmly woven, showing a high class of bird architecture.

I am happy to say that the old birds, after their first scare, did not seem to be concerned in the least about having their family transfered from a beautiful neat home to a rude tin can, and the young seemed to grow just as fast. All they seemed to need was plenty of food and a little warmth at night: No style for them.

Every morning before we got up we could hear the shrill clear whistle-like songs of our little friends as they sat on the roof of the cabin, or darted between and about the logs in search of their food. On the morning of our departure I took a last look at the youngsters. They were greedy now and showed much life. How I wished that I could stay with them and see that they left the nest safely. Even now, whenever I am in the mountains it is with pleasure and joy that, as I come around some point or cliff, I hear again the clear melodious song of one of these energetic little wrens. It always takes me back to the old cabin in Coldwater and its happy family of canyon wrens.

Claremont, California.

NESTING OF THE PINE SISKIN IN CALIFORNIA

BY H. W. CARRIGER AND J. R. PEMBERTON

DURING the months of April, May and June, of 1903 and 1904, the writers examined in San Mateo and San Francisco Counties some twenty-five sets of the eggs of the pine siskin (*Spinus pinus pinus*). Owing to the loss of Carriger's collection and notes in the San Francisco fire the number of sets taken is not exactly known, but approximately ten sets were taken. To the writers' knowledge these are the only authentic eggs of this bird ever taken in California and a short description of their taking may not be uninteresting to CONDOR readers.

The taking of a male siskin with testes fully developed on April 5, in Marin County, and the seeing of several pairs of birds in San Mateo County a few days later, led to the suspicion that the birds were nesting in the vicinity



TYPICAL NEST OF PINE SISKIN IN CYPRESS

of San Francisco. Diligent searching for the birds had its result, and on April 12, 1903, a small settlement of siskins was discovered in San Mateo County about a mile from San Francisco Bay. During the following two months every opportunity was taken to study this interesting bird. On April 12, 1903, two partially built nests were found by watching the birds carrying dry grass from the fields to the nests. On April 23, 1903, our first set of eggs was taken from nest number two. The nest was twelve feet from the ground, on the top of a long cypress limb which hung directly over a well-traveled road. There were four eggs in this set, and one would have thought them worth four hundred dollars from the care we took in packing them.

Of over forty nests found of the pine siskin, only one was not built in a cypress tree, and this one was in the very top of a fifty-foot eucalyptus. The nests were built in full-grown cypress trees planted in rows along roads or as division-lines between fields.

Nests were usually about twelve or fifteen feet from the ground, but notes show records of several forty feet up, and one fifty feet from the ground. The site

chosen was almost invariably about six or eight feet from the trunk of the tree and upon the top of a good, strong, leafy limb. The nests were well built, quite compact, and slightly larger than those of the green-backed goldfinch whose nesting the siskins' closely resembles. Nests were constructed of dry roots, grass and leaves from under the cypress trees, and were generally, tho not always, lined with considerable hair. The nests were always of the same material and could be distinguished at sight from nests of the western chipping sparrow, California purple finch, and willow goldfinch, all of which birds were sometimes nesting within a few yards of one another.

The nesting season runs from the second week of April to the first of July. The earliest set taken was on April 10, 1904, and the latest was a nest containing one fresh egg on June 10, 1906. This same nest contained two very young birds on June 24, two weeks later. A siskin was also seen carrying grass into a cypress



TYPICAL NESTING SITE OF PINE SISKIN
SAN MATEO COUNTY, CALIFORNIA

on June 24, and while this seems to point to nesting on into July, such instances are undoubtedly exceptional. The height of the nesting period, however, is from April 20 to May 10, and it was between these two dates in both years that the majority of nests were discovered.

The average set seems to be three eggs, but four is also a common number. Several sets of two eggs were taken in advanced stages of incubation, and also two sets of five, but these are rare.

The eggs are a pale greenish blue several shades lighter than eggs of *Astragalinus*, and are marked with chocolate spots and irregular blotches, with a number of pale lavender blotches which appear to be beneath the surface of the shell. Eggs vary from very nearly unmarked, to well marked about the larger end and sparingly over the whole surface. The average size of all eggs at hand is .63 by .48 inches.

San Francisco, California.

A SEASON WITH THE PACIFIC HORNED OWL

BY NELSON CARPENTER

IT is a hot August day in southern California. The nesting season has closed and some of our smaller birds are gathering in flocks. As I sit turning the leaves of well-filled note-books, many pictures of past seasons are brought to mind. The first scene to be recalled as I open each book is one near the home of some pair of horned owls.

The winter of 1903 was the last I spent in San Diego County, and was also the most productive in the way of notes. My first entry that season is dated February 8. It was made as soon as I reached home on a Sunday evening after a long wet tramp that is still fresh in my memory. My brother and I had started out immediately after dinner on a prospecting trip for *Bubo* treasure. Our destination was a deep canyon two miles from home. A pair of horned owls (*Bubo virginianus pacificus*) had occupied an old red-tail's nest in a tall sycamore for many years, but had selected a cave in a rock pile just above the old site the previous season. This cave I had found by "following my nose" when searching the gulch in 1902.

Instead of going up the ravine the same as usual, that year I went directly over the hill and entered the canyon above the hawk's nest. While scrambling down the hill a strong breeze brought a stench that did not smell like fresh meat by some days. Curiosity always gets the better of me so I followed the scent which soon led me to the bottom of a steep rock pile. Here among a heap of pellets and bones lay a dead horned owl. It took only a few moments to locate the cave, five or six feet above, which contained three fresh eggs half buried in the earth. This cavity was so easy of access that any species of mammal no matter how helpless could have entered without half trying. I packed the set, but it was not without regretting the loss of so faithful a pair of birds. However on the day when my first 1903 note was written my brother and I decided to follow the course chosen the previous year. From the top of the hill the red-tail's nest could be plainly seen and was deserted as we had expected. With little hope we hastened our steps to the rock pile. To our surprise Mrs. Bubo went flopping out from beneath our feet leaving two clean, nearly fresh eggs.

On our way home we met the Dixon brothers, and now that "the ice was broken" we determined to hunt up another pair. Operations began along a small creek near home where a horned owl had been shot from a hawk's nest in an oak tree February 2 of the previous year. The nest contained one egg on that date, but altho the bird had been shot we expected to find another female in possession.

Luck seemed with us; so we pounded the hollow trees and threw rocks at a couple of old hawk's nests but with no results.

Where the creek emerged from a deep canyon we divided our party, two of us climbing the hill to some rock piles while the other two continued up the creek bed. I, of course, was in the party who had to climb the hill. We soon reached our cave, however, and found it just as it had been for years. It was so situated that a fine view of the entire canyon lay before us, so it was an easy matter to follow the movements of the party below. They were two-thirds the way up the ravine and seemed to be having as bad luck as we, when to our surprise an owl flew out from under a large overhanging rock but a few feet to one side of them. One of the party disappeared into the cavern and soon emerged with another set of two nearly fresh eggs.

We were well satisfied with the afternoon's work; so started for home determined to get busy at once and pay other owl homes a visit.

The next Sunday found me fifteen miles from home at a much higher altitude than that where I had been the Sunday previous; for large patches of snow lay on the ground in many places. I knew the exact nest where a family of young *Bubos* had been reared in 1902, so I made straight for the tree. No leaves had started, so the nest could be distinctly seen for some distance. A nearer approach revealed to me the horns of an owl clearly outlined against a distant hill. Small sycamores are easy climbing with good irons and it took but a few minutes to cover the forty-nine feet of tree-trunk to the nest. One egg was all I saw. Five days later I returned and secured a fine set of three. I also did a little exploring at this time.

The numerous canyons in the neighborhood all contained a number of old hawk's nests: These were bombarded with rocks as fast as I could drive from one to another. I probably had gone a couple of miles and visited a dozen nests before I found that for which I was looking. The old owl left when I threw the first rock and disappeared up the gulch. The nest was a large affair fifty-five feet up in a live oak and one I had never seen before. Imagine my disappointment when I looked over the edge and saw one dirty egg. Closer examination however revealed a crushed one glued tightly to the bottom of the nest. I had no kick coming for the day's trip, so I returned home planning my next excursion.

Washington's birthday was my next opportunity to look for *Bubo* and I planned a long drive. A twenty-mile ride brought me to the top of a high cliff which had been formed by the gradual wearing of a creek leaving perpendicular walls one hundred feet high on each side. A horned owl flew from an old dilapidated eagle's nest, which proved to be empty. I now began my usual operations of rolling large rocks over the edge and watching results. After a couple of trials I flushed another owl from the center of the cliff. I felt encouraged but could see nothing. I tied my rope to a large rock, slid down to a ledge and worked my way down a crack in the direction of the place where I had flushed the bird. I soon found myself on a shelf about four feet wide and five feet long. A large rock had lodged on the outer edge but behind this lay three *Bubo* eggs. Rabbit fur and small bones littered the ledge, but made a poor nest lining especially when mixed with a number of pieces of broken stone. As a probable result, I found one of the eggs cracked in several places. I packed the set and in a few moments was at the top of the cliff. This set proved to be nearly hatched, so was prepared only after some difficulty.

After dinner we drove six miles further to a grove of sycamores containing a number of red-tails' nests. The hawks were flying around but had no eggs as yet. However, the tell-tale horns of an owl could be seen above the edge of one of the nests. The structure was the largest in the grove but fortunately in an easy tree and only fifty-five feet up. The nest yielded three nearly fresh, abnormally-shaped eggs. Had they been smaller they would have passed for barn owl's eggs.

Other species of *Raptores* occupied my time for the next couple of weeks; but on March 15, just three weeks later, I returned to collect red-tail rent. The first thing I found upon entering the grove was a dead hawk; but still hoping for the best I began to search the grove. Mrs. *Bubo* had taken possession of another nest very much to my surprise and had two more pointed eggs.

On the Sunday following I made a trip to the mountains after more red-tail rent. I had collected a set of two, two of three, and one of four and found I still

had time to investigate a new canyon. The first tree I found containing a nest was a large live-oak. A stick thrown into the branches flushed a bird, but it was not a red-tail. Yes, another horned owl! The twenty-second of March was pretty late, but the temptation was too great; so up I went fifty-five feet into the very top of the live-oak to be greeted by a rather surprised look from a big bunch of white down. There was an egg also, but it was addled. This I took, for it was the only addled egg of this species I ever found.

One would think that I had all the horned owls in San Diego County corralled by this time. But San Diego County is a large one and but sparingly settled. The more you travel about the more you find. The twenty-ninth of March found me after red-bellied hawk's eggs in the historic San Luis Rey river bottom. I had taken a nice set of three and was about to start for home when a strange nest caught my eye some distance up the river. A stick thrown at the structure flushed a horned owl; but it was late in the day, as well as in season, so I left her without further molestation.

Numerous pairs of owls are not the only things we are thankful for in my locality, for the collector admires the size of the trees. Southern California does not boast of such giant sycamores as those of Illinois in Patrick Henry's time; for my highest record is but sixty-three feet, while fifty feet is a good average.

Escondido, California.

BIRDS OBSERVED FROM MARYSVILLE TO GRASS VALLEY

BY LOUIS BOLANDER

LAST year I had the fortune to attend a surveying party in California from Marysville, Yuba County, to Grass Valley, Nevada County, some twenty-six miles. We also went from Lime Kiln, a place on the line between the last two named places, to Auburn, Placer County.

The first Sunday I crossed the bridge to the south, leading from Marysville into the bottomlands of the Yuba river. What was once orchards and fields is now a waste of bottomlands covered with brush, swamps and trees. This waste was caused by the sediment from hydraulic mines and dredgers up near Hammon City gradually filling the river bed. Marysville, described in older geographies as a city on bluffs at the junction of the Feather and Yuba Rivers, is now surrounded by levees. At this date (May 6, 1906) Marysville was three feet below the bed of the river and in danger of flooding. Even as one enters the bottomlands rows of fruit trees can be seen apparently growing out of the sand and here and there is a house top sticking up, mute evidence of the power of nature over man.

I no sooner entered this barren district than I saw a nest up in an alder tree about six feet from the ground. Upon climbing up I flushed the mother bird, a close sitter, and found one fresh egg of the western chipping sparrow (*Spizella socialis arizonæ*). The nest was made of light-colored straws loosely put together, lined with a few black horsehairs, and easily seen from the ground. All the time I kept near the nest the mother kept up a chirping, at the same time flying around in the bushes close to the ground. The male did not come near at all.

About a hundred yards further in the brush I came across a small patch of

sword grass. When I came to about the middle I flushed a small greenish yellow bird. Even tho I saw just where the bird flew from I had quite a time finding the nest. It was built in the sword grass among a few blackberry vines about one foot from the ground, and contained four fresh eggs. The nest was made entirely of dried sword grass lined with black horsehair, and was deep like a cup. The eggs were white marked on one end with lines and dots of black tending toward the forming of a ring. I sat down and waited. Finally I heard a small chirrup behind me, and turned quickly. This was a mistake on my part for no bird did I see. Another long wait and another chirrup, this time to my left. I staid perfectly still this time and finally caught sight of the female and her mate hopping around in the nearby bushes. They gradually came nearer and as soon as I saw the bright colored male with his black mask I knew what I had found. It was a nest of the Pacific yellow-throat (*Geothlypis trichas arizela*). The birds made quite a disturbance, the male chasing his mate toward the nest, but he would not come nearer than within ten feet of it even tho she came and sat on the nest. As soon as she got comfortably settled he left.

A little further on was another patch of sword grass. Here I flushed another female yellow-throat. The nest was built of the same material as the first and was in the sword grass about a foot from the ground. It contained four perfectly fresh eggs. The parents staid near all the time I was around; I could hear them, but rarely caught sight of them. I found another nest of this species near the other end of the patch in about a similar location containing four fresh eggs.

On the other side of the road near a fresh water pond I saw a pair of yellow-throats. As soon as they saw me they disappeared in the underbrush. By this time I knew where to look for the homes of these birds. Seeing a few clumps of sword grass about thirty feet from where the birds were at first I commenced to look. The first clump revealed nothing. But the first time I parted the second clump I looked directly down in a yellow-throat's nest containing five fresh eggs. The nest was about one foot from the ground and built of the same material as the others. The parents did not come around.

The next was a nest of a western chipping sparrow which was built in a tree about seven feet from the ground and very easily seen. It contained four incubated eggs. This made incubated eggs, pretty nearly ready to hatch, on the same date I found the fresh egg. I also found two old nests of this species and two old nests of the bush-tit in the close vicinity. I also found a bush-tit's nest near here containing one fresh egg. The parents were absent.

I saw a nest about twenty feet up in a tree. Even tho it looked like an old nest I decided to climb for it. It was a cottonwood tree and had many little branches to retard my movement. When about ten feet up I came across a pretty beetle which I tried to capture and take along. We played chase for a while until finally he squirted some liquid in my face which stung so I made quick descent to the ground. I decided not to climb in that tree again. I washed the liquid off and moved on. There were quite a few beetles in the bottomland both large and small. The most numerous kind was about an inch and a quarter long and had a very pretty green back.

In a clump of young cottonwoods I had another new experience. I came across a dead tree, and about six feet up I saw what I supposed was an old nest. It was of lichens, etc., and saddled upon a limb against the main trunk. I pulled it down, but was much ashamed of myself when the parents returned. It was a pair of gnatcatchers (*Poliioptila cerulea obscura*) which were just building. I replaced

the nest, but the parent birds deserted it. Towards evening when I returned I went into this clump of cottonwoods again and by keeping quiet was surprised to see this pair of gnatcatchers again building. This time they had selected the very top of a young live cottonwood for their home, which grew about thirty feet from their former tree. They already had the foundation built. Both birds helped to build but the female bossed the job. She would always be there to inspect the work of the male, but would come there alone too, at times. Before leaving the nest to get more material she would hop all around the nest, chirrup twice and then fly. Never while I watched did she chirrup more than twice. I did not have a chance to return again to see this nest.

The last nest I found this day was one of the spurred towhee (*Pipilo maculatus megalonyx*). While walking under the trees beside the road I stepped on a dead limb lying on the ground. A bird flushed so close that it gave me a scare. On looking I found the nest, flush with the ground and lined with a few grasses. It contained four fresh eggs. The parent birds kept up a continual noise while I was there.

MAY 7, 1906.—On the way to work I saw a yellow-breasted chat (*Icteria virens longicauda*). He flew about thirty feet up into the air, then spread his wings and tail, fluffed all his feathers up and slowly came back to the brush. All the time he kept up his imitations. A mate was evidently close at hand.

At lunch time I found another set of yellow-throat's eggs. The nest was in sword grass about two feet from the ground and contained five fresh eggs. The female was flushed. Near at hand I heard the familiar chirrup from the gnatcatchers. I easily followed them to their nest in the top of a slender cottonwood. The nest was made of lichens and cob webs lined with some kind of down and plenty of feathers. It contained three fresh eggs. The birds flew within an arm's length when I was near the nest and kept up a constant cry. I also saw several lazuli buntings, some small-sized herons, and two males and one female of the mallard.

YUBA DAM TO SHEEP DIP, MAY 7 TO 12.—As we got nearer to Sheep Dip, our next camp, I saw quite a few magpies. I saw one flock of about twenty. There were tree swallows in the dead oaks. Also saw one canvasback duck.

On May 11, I found a nest of the yellow-throat. It was built over a swamp in sword grass and contained four heavily incubated eggs. The parent birds did not return even tho I flushed the female. I also found a nest of the "marsh blackbird" built in the tules above the swamp. It was made of tules and mud, and contained four incubated eggs. The parents were noisy.

On the way home I found a nest in a coffee pot in an old tin can heap. Two days before I had seen the parent bird enter with food for her young, but did not have time to investigate. When I looked this time the nest was empty; but underneath the layer of feathers, I found a rotten egg which the parent bird had evidently covered. By a later set I saw it must have been a nest of the Vigors wren.

On May 12, I found a deserted nest of the linnet containing four eggs. The rain two days before had evidently caused the desertion. I also saw a ground owl beside a hole which must have been its nest. I caught a young killdeer near Sheep Dip. In a locust tree near Sheep Dip I found a new nest of the western kingbird. The birds never returned to it after I looked at it. In a similar tree down the road a little further I found a nest of the California shrike. It was about ten feet above the ground and was made of straws, etc., lined with hair and wool. There were six heavily incubated eggs in it. The parent bird did not utter a cry

while I was near. Lark sparrows were plentiful. The farmer of that country believes that if a swallow builds in his barn it will not burn; and some will even take off the insurance. A black phoebe is called a "storm bird" in that region.

BETWEEN SHEEP DIP AND HAMMON CITY, MAY 13, '06.—In an old magpie's nest in the top of an oak I found a set of five sparrow hawk's eggs, heavily incubated. The parent did not fly off until I was within five feet of the nest. This was in an oak tree near a farm house.

The next oak contained a nest of the yellow-billed magpie (*Pica nuttalli*) about forty feet from the ground. This contained five fresh eggs. It was made of oak twigs lined with mud and hair, and having a dome of oak twigs. The parent birds were very noisy. There were three other nests in nearby oaks all containing young. Each nest had an addled egg in it.

Bullock orioles (*Icterus bullocki*) were plentiful in the oaks. They built in the outhanging limbs, making their nests of hair, lined with wool, the heights ranging from six to twenty-five feet from the ground. Three nests I looked at had one fresh egg each, one nest had five incubated eggs and another five fresh eggs. The parent birds would stay above me in the oaks and chatter and growl as long as I was near. I saw one nest that had oats interwoven in the hair making the most beautiful nest of its kind I ever saw. I also saw a female oriole hanging beside an unfinished nest. Upon examination I found a single horsehair had become tangled around her neck and she had died beside her unfinished home.

The next nest was one of the Swainson hawk in an old magpie's nest in an oak. It contained two fresh eggs. The parent bird flew off when I came under the tree and sailed away slowly without a cry. There were many nests of the kingbird, but it was too early for their eggs. Mourning doves were numerous also, but no eggs were found. The English sparrow had invaded even this country. They built in the oaks near the farmhouses. I also found an unfinished nest of the Arkansas goldfinch in a poplar beside the river.

SHEEP DIP, MAY 13 to 24.—Found a nest of the meadow lark in a field, containing five fresh eggs. The bird was a close sitter. I also found a set of dove's eggs in a field laid on the bare ground. May 16, I found a ground owl's nest. I dug out the nest and found eight eggs and one young. Two of the eggs were fresh. When I reached in and pulled out the sitting bird by the leg she did not attempt to bite. When I let her go outside of the hole, instead of flying away, as I naturally supposed she would, she dodged back to her nest in the ground. The remains of a lark and a rat were in the nest. The entrance was lined with cow dung.

May 17, I dug out another owl's nest. It contained eight eggs, one of which was fresh, two or three rotten and the others in different stages of incubation. May 20, I found another set of the Swainson hawk in an old magpie's nest in an oak. It contained three incubated eggs. The parents made no outcry. The linnets' nests I observed all had incubated eggs. In another magpie's nest I found three fresh eggs of the sparrow hawk. The parent bird raised a big outcry. All the magpie's nests I saw had young. I also found another nest of the gnatcatcher. It was built in a live-oak about twelve feet from the ground. It was built of lichens, feathers, etc., and saddled upon a lone branch. The next nest was one of the California jay. It was built of twigs lined with hair, and looked flimsy. The parent bird slipped off and did not utter a sound all the time I was near. A little further on I found a nest of a flicker. It was in a pine stub about thirty feet from the ground. The hole followed a quarter turn in the tree and was about a foot deep. It contained six glossy, white eggs showing the yolk thru the shell.

By a stream I saw a small hole in a stub of a tree about six feet above the water. It contained the nest of a Vigors wren. There were seven fresh eggs on a lining of grass and many feathers. The bird was absent but soon returned. She uttered no cry while I was near. The woodpeckers' nests I saw were built in solid oak trees and could not be looked into. May 19, I found a fresh set of five linnet's eggs that had no spots on them. It was in a nest in an oak about twelve feet from the ground. There was also a set of doves' eggs in a nest in an oak about twelve feet from the ground. On the 24th I found another set of dove's on some drift wood by the creek.

AROUND SPENCERVILLE, MAY 27 TO JUNE 3.—I found a nest of the western lark sparrow containing four incubated eggs. The nest was built on the ground in the pine needles under a dead pine limb. The birds were quiet. Also a nest of the brown towhee containing four incubated eggs which had been deserted on account of rain. Another deserted nest of the same species contained one fresh egg.

The next day I found another nest of the western lark sparrow. It was built in the top of a scrub oak about six feet from the ground, and contained two incubated and one fresh egg. The two incubated eggs were probably caused by the bird covering the eggs during the few days' rain we had, the fresh egg being laid after. I also found another nest of the California jay. It was built in an oak about six feet from the ground and contained four fresh eggs. The parent bird, altho startled, did not utter a sound. This is about the only time this noisy bird will hold its tongue! The next day I found two nests of the valley partridge. One nest contained twelve, the other seventeen fresh eggs. Both were built on the ground under young oaks growing on the line that was brushed out the previous year. There were many deserted nests of birds, containing eggs and dead young. This was the first instance the farmers could remember of having such rains at this time of the year.

LIME KILN, JUNE 8 TO 10.—The new birds I saw here are as follows: I found two nests of the western robin, one containing two, the other three fresh eggs. Both nests were built in oaks near the ground and exposed. The materials used were straw, mud, string and rags. I found four nests of the spotted sandpiper (*Actitis macularia*). On an island in the middle of a creek I found a nest with one fresh egg. The egg was placed in a depression on the ground among a little grass. On the other side of the island was a mother with four young. She kept up a continual cry. The young matched the color of the ground. On the bank of the creek I found a nest of this species containing four fresh eggs. It was located on the ground under a tree. The depression was lined with a few grasses. The eggs all pointed toward the center. Another nest was built on the shore among the rocks and contained no lining. It contained four fresh eggs.

A nest of the lazuli bunting, containing four incubated eggs was built in a live oak bush about three feet from the ground. The materials were plant fibers lined with hair. Near the same place I found three nests of the black-headed grosbeak. One nest in an oak contained two fresh eggs, the other two were built in the same alder tree and contained one and three eggs respectively. All the nests were made of purplish-colored rootlets. In an adjoining alder, which I climbed to look into one of the grosbeaks' nests, I came across a yellow warbler's nest containing four slightly incubated eggs. It was built against the main trunk and was made of alder fibers, willow down and hair. The bird was absent. I also saw a nest containing five young flickers. They were so large they completely filled the excavation, and could fly when I took them out.

LIME KILN, JUNE 10 TO JULY 1.—I found a nest of the willow woodpecker in a rotten alder stub by a creek. The chips showed me that it was a late nest. It contained four fresh glossy white eggs. The parent bird was very noisy but did not come near. The next nests found were two of the western wood pewee. One contained four fresh eggs. The nest was saddled upon a limb of an alder about six feet from the ground. The other was built in a crotch of an alder about twenty feet from the ground and contained two eggs. The next nests were two of the valley partridge. One contained fifteen eggs and the other twenty-one eggs. I thought I had found a large set but another member of the party reported the finding of a set of twenty-two a couple of days later. This was the largest set reported. All nests were on the ground under bushes. Another peculiar nest I found was one built about ten feet down in an old mine shaft. It was some sort of a swallow's nest, built of red clay, and at this date contained three young. The parent birds would not come near, and were not seen closely enough to identify. It was quite dark and damp where the nest was.

Around Dry Creek, near Auburn, nighthawks were numerous. About dusk they would fly about high up in the air with their peculiar flight and cry. They would take three or four slow flaps of the wings, then three or four very fast flaps and rise in the air, always uttering their peculiar cry when rising. Once in a while they would dive straight down with a sound like an enormous bow-string being struck. It was likely to scare one if it came unexpectedly, and if one was not accustomed to it.

San Francisco, California.

FROM FIELD AND STUDY

Feeding Habits of the Lewis Woodpecker.—Late on the afternoon of December 8, 1906, while riding between Witch Creek and Santa Ysabel, I noticed ten Lewis woodpeckers (*Melanerpes lewisi*) flying about over a creek catching insects in the manner of swallows, with flight that was graceful, resembling that of the latter. I never before noticed them feeding in this way, their usual habit being to perch on top of dead trees, darting from a limb to catch passing insects. They have been unusually common here this fall.—H. W. MARSDEN, *Witch Creek, California.*

Notes From Placer County, California.—Band-tailed pigeons (*Columba fasciata*) occurred here in considerable numbers this fall, appearing to be most numerous along Bear River, where ideal feeding grounds abound. The first noted were a few scattering birds on September 21, 1906. On October 17, a flock of about three hundred were seen feeding on acorns and "coffee" berries; and scores of birds were continually passing overhead, following the course of the river. Large numbers have been killed by hunters.

This country is very much alive and the common turkey vulture is seeking new climes! During the first week of October I noticed five flocks of from twenty-five to sixty buzzards (*Cathartes aura*) slowly making their way westward. They appeared to be young birds, but I have never been able to discover breeding grounds in this vicinity.

A few robins (*Merula migratoria propinqua*) have remained in this locality thruout the summer. They breed here in small numbers, but usually leave soon after the young are able to fly.

Quail (*Lophortyx californicus vallicola*) are plentiful, even tho the late rains destroyed large numbers of eggs. I collected a set last spring under rather peculiar circumstances. We had cut and cocked our meadow grass, when the late rains came and interfered with hauling. Some of the hay was ruined and it was a month before it was removed from the field. These haycocks

make an ideal nesting place for the quail, and many a nest did we uncover. From one cock I had just pitched the third forkful of hay to the rack, when a quail flew past my head apparently from the wagon. Search revealed the fact that with the last fork of hay I had picked up a quail with her nest and eggs and had landed all safely on the rack. Twelve eggs were found reposing unharmed in their nest of feathers.

To my knowledge the last of the much persecuted mourning dove (*Zenaidura macroura*) left this locality November 4, 1906. Sportsmen (?) demanded of the Supervisors that they open the shooting season two weeks earlier than formerly, contending that by August 1, all the doves had gone to the valley. Yet on that date I knew of twenty nests, containing eggs or young, within an eighty-acre field on this place, and the birds were fairly plentiful thruout September.

A stray yellow-billed magpie or California crow occasionally visits at this altitude (1750 feet), but returns immediately to his valley home.—ERNEST ADAMS, *Clipper Gap, California*.

Band-tailed Pigeons at Santa Barbara.—On September 18, two of these handsome birds alighted on a lilac bush in our garden. They were quite tame, allowing me to approach within a few feet; thus I had an admirable chance to identify them as the above named. As they did not attempt to feed during their short stay, it is my supposition they were migrating, and had stopped over to rest. This is the first time I have seen *Columba fasciata* in this County.—REGINALD ROGERS, *Santa Barbara, California*.

A Notable Sparrow's Nest.—A nest of *Passer domesticus*, with two entrances, blew down from its unstable perch in the Virginia creeper on the side of my house, November 25. The sparrow had industriously gathered together a mass of dry grass as big as a hat. The nest, which was deep, was warmly lined with feathers. At one side, below, there was an opening thru the feathers evidently designed as a "look out," or ventilator. The bird might have escaped thru the hole in case of necessity, but probably used the main entrance exclusively as a point of ingress, as the feathers about the extra orifice projected blades outward, showing that the bird could not have well flown in without disarranging the downy window casement.—H. R. TAYLOR, *Alameda, California*.

The Alaska Water-thrush in California.—On August 16, 1905, I obtained an example of *Seiurus noveboracensis notabilis* which provides the second record known to me for this State. The bird was flushed from a tangle of bushes which surrounded a spring in a ravine, a hundred yards or so back of Jim Johnston's house at Cactus Flat. This is a "pocket" at about 6000 feet elevation, on the desert slope of the San Bernardino Mountains, San Bernardino County, California.

The region is an arid one, and I was at the spring on purpose to scrutinize the hordes of birds which were constantly visiting it for a drink and a bath. A good part of these were transients, which reminds us again that to stand the best chance of finding northern stragglers, one must strike the fall migration early in August.

The water-thrush was among a throng of warblers and small sparrows, several of the latter in streaked juvenal plumage, and I did not recognize it as anything noteworthy, until it flew up out of the shade and perched with other small birds, drying themselves in the open branch-work of a fire-killed oak. Then my attention became fixed upon it because of the peculiar recurrent dipping movement of its body, and its identity flashed into my mind. I promptly "auxed" the bird, and found upon skinning that it was a "bird-of-the-year," as shown by the large "windows" in the skull yet ungranulated. To be more explicit the specimen (No. 7157, Coll. J. G.) is in complete first-winter plumage. It is precisely like examples from northern Alaska in both coloration and measurements.—JOSEPH GRINNELL, *Pasadena, California*.

Another New Record for Marin County, California.—For the first time in my long residence in this County it has been my fortune to see a yellow-headed blackbird in this part of the State. On October 17, I saw two males of this species (*Xanthocephalus xanthocephalus*) flying north and close enough to be readily distinguished, being just about out of gunshot, but near enough to be unmistakable. There is no particular reason why this species should not be found here occasionally; but no individual has been previously recorded that I know of.—JOSEPH MAILLIARD, *San Francisco, California*.

The English Sparrow in Los Angeles County.—On dropping off the train at Newhall for the outing meeting, May 19, 1906, the first birds observed were a colony of English Sparrows, (*Passer domesticus*) which had their homes about the station buildings, and in the pines and eucalyptus trees adjacent. There was the same noisy chatter heard everywhere in the East; and the black-throated males with the duller females, made identification unmistakable. Thus we see that this little pest is gradually closing in on us, Tehachapi having heretofore afforded the nearest record (see Howard, CONDOR VIII, p. 67).—J. EUGENE LAW, *Hollywood, California*.

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

JOSEPH GRINNELL, Editor, Pasadena.

H. T. CLIFTON, Business Manager, Box 404, Pasadena

WILLIAM L. FINLEY } Associate Editors
JOSEPH MAILLIARD }

Pasadena, California: Published Feb. 4, 1907

SUBSCRIPTION RATES

One Dollar per Year in the United States, Canada, Mexico, and U. S. Colonies, payable in advance.

Twenty Cents the single copy.

One Dollar and a Quarter per Year in all other countries in the International Postal Union.

Claims for missing or imperfect numbers should be made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the Editor.

Advertising Rates on application.

EDITORIALS

Thru a series of unforeseen contingencies, the second and third parts of Finley's condor article will not appear until later in the year, tho both will surely be run in our present volume. The delay, however, will be beneficial in the long run; for it will enable Mr. Finley to further perfect the material on hand, and also to gather additional data from outside sources.

It will be remembered that Mr. Lee Chambers, of Santa Monica, has for several years been accumulating information respecting the California condor. A surprisingly large number of records have been authenticated, and the literature of the subject thoroly overhauled. Now that Mr. Finley has so good a foundation, Mr. Chambers has very generously insisted upon turning all the results of his own work over to Finley, to be incorporated with the latter's "Life History." This will all appear in due time in "THE CONDOR."

The California Academy of Science's expedition to the Galapagos Archipelago, which left San Francisco June 28, 1905, returned safely to the home port the first of December last. All members of the party were in good health, tho glad to get home. Mr. R. H. Beck, who headed the expedition, considers the collections obtained by far the most extensive and complete of any that have ever been taken from that group of islands. These large quantities of material, in almost every branch of natural history, await the work of specialists before the actual scientific results become fully known.

The most important local record in our present issue is the new one for the English sparrow, which has at last made its appearance in Los Angeles County. The approach of this invader along the railroad lines from the north has been slow but steady, and its ultimate establishment here has been expected for years. It will now be interesting to see how the native linnet fares in competition. Yet it will probably be several years before the pestiferous interloper begins to affect our native bird fauna.

Mr. R. C. McGregor calls our attention to the following rich sample of popular ornithology taken from a no less substantial current periodical than the *Century Magazine* (March, 1906, page 788).

"In the feathered world of the West there is an analogous case of the utilization of the cactus-plant for the protection of progeny. Singularly enough, though in a dry country, it is a wading bird, one of the varieties of the curlew, with a long bill and long slender legs, which, like the antelope, uses the cactus as a home and defense for her nest and young.

"She will carry sticks in her long bill and drop them in position as nearly as possible in the center of a cactus-patch while hovering over it. When she has accumulated enough, alighting on the heap, she arranges her nest, wherein she lays four beautiful turquoise-colored eggs about as large as those of a domestic hen, and then comes and goes from her nest at will, knowing that it cannot be molested."

McGregor asks, "Did you ever hear of such a stunt by a curlew? Does any curlew lay 'beautiful turquoise-colored eggs'?" We would like to know, too!

Mr. W. L. Finley was recently appointed lecturer for the National Association of Audubon Societies. He lectured in Baltimore, Chicago, Grand Rapids, Cincinnati, Indianapolis, St. Louis, St. Paul and other cities in the interests of the Audubon work. During the spring he will make a lecture tour thru Oregon and Washington for the National Association.

We are in receipt of a cordial letter from Dr. D'Evelyn, the new president of the Cooper Ornithological Club. He enters upon his new duties enthusiastically, and we trust that a new era of activity will be inaugurated in the Northern Division of the Club, where interest in birds has been rather feeble since the "quake." Dr. D'Evelyn hints of certain plans for the spread of the Club's influence, especially along the lines of bird protection and educational work.

The Fish Commission steamer *Albatross* returned to San Francisco, December 11, after a very successful scientific cruise along the North Pacific coast of Asia. Dr. C. H. Gilbert, of Stanford University, was in charge of the work, and Professor J. O. Snyder was one member of the party. Marine forms of life were the chief objects of interest, and vast quantities of specimens were properly preserved. The fishes received most attention, and these will be worked

up by the ichthyologists at Stanford. As far as we are able to learn, the ornithological results of the expedition were relatively unimportant.

PUBLICATIONS REVIEWED

The present reviewer cannot remember to have ever read a book more profitable, and at the same time entertaining, than BEEBE'S "THE BIRD".¹ The brief title at first glance seems to lack sufficient definiteness as to the real nature of the subject-matter. The book has nothing to do with systematic ornithology: species are mentioned merely incidentally; but a multitude of subjects related to evolution and adaptation are dealt with. After all, as we think it over, the book *does* treat of *the bird*, inclusively and broadly. Yet one must have read and studied the whole book to comprehend its scope.

Our first pleasure was in simply "looking at the pictures." Every one of the 371 illustrations are significant *per se* of some fact of bird structure or habit. One does not have to read the context to gain at least some suggestion of what the pictures are meant to show. There is every indication that Mr. Beebe has spent plenty of time in securing the most instructive photos for the bringing out of each desired point.

And the text is as good as the pictures. The style is non-technical, but not too "popular" in most places. Here and there, there is a shade too much of literary ornateness, which to our minds does not strictly harmonize with the scientific treatment of a subject. But this is so inconsequential a criticism, that we feel almost ashamed to have ventured it.

The following are a few of the subjects discussed: The ancestors of birds; growth and structure of feathers; framework of a bird; organs of nutrition (tongues, crops, gizzards); food and feeding-habits of various birds; breath of a bird; senses; wing-structure and flight; theories of coloration; the bird within the egg.

Beebe's "The Bird" is an extraordinary book, and we advise our readers to get this one above any other work on birds of the same size.—J. G.

"THE PROTECTION OF OUR NATIVE BIRDS" is the title of a pamphlet² by Professor MONTGOMERY of the University of Texas. In the publication and distribution of such carefully

and convincingly drawn up papers as this, can the educational centers of each state do much to spread the cause of bird protection. As Professor Montgomery suggests, it is thru the *schools* that the knowledge of the value of birds can be emphasized at large. Nature courses in the lower grades are most productive of widespread good, it has seemed to us. The *economic* value of bird-life is what will appeal, by way of the school children, to the adults of the community.

The present paper presents the subject strongly, and cannot fail to have its good effect. So good a service has thus been done by Professor Montgomery that we are quite ready to pardon his extreme attitude in respect to collectors. It is too bad, tho, that people have to go to extremes!—J. G.

In a profound essay on "THE PROBLEM OF THE ORIGIN OF SPECIES," Professor C. O. WHITMAN briefly reviews³ the progress of our knowledge of the methods of species-formation, and contributes to their further understanding. While agreeing that the majority of animals may be subject to ordinary or fluctuating variation (that is, variation uniformly in all directions), and that evolution in such cases seems to be solely directed by natural selection (or survival of the fittest), Professor Whitman maintains that further, in some cases at least, there is *orthogenesis* as a result of continuous asymmetrical or "definite" variation.

Orthogenesis, as the present reviewer understands it, is the evolution of a linear series of descendants in a definite direction (as regards some one or more specific characters), irrespective of the Darwinian essential of fitness or unfitness and resulting persistence or elimination of individuals. This would conveniently account for the very beginnings of certain structures, now clearly adaptive, but of which we cannot imagine a series of *useful* rudimentary stages.

Professor Whitman has been a strong advocate of experimental evolution and is himself at work along that line. For the past ten years he has had under constant observation a succession of generations of the common pigeon (*Columba livia*). Supplementing these, he makes use of specimens of all available wild species of pigeons and doves. He has selected, for reasons of convenience, as characters for observation, the color-patterns shown on the outer surface (coverts) of the wing. The endeavor was to find a case where he could trace the history of one particular specific character. An ideal case seemed to be provided by the

1 The Bird | Its Form and Function | By | C. William Beebe | Curator [etc., 4 lines] | with over three hundred and seventy illustrations | chiefly photographed from life | by the author | [vignette] | New York | Henry Holt and Company | 1906; pp. xii—496, 1 plate, 371 text figures.

2 The Protection of Our Native Birds | By | Thos. H. Montgomery, Jr. | Professor of Zoology [Bulletin of the University of Texas No. 79, Scientific Series No. 8; Oct. 1, 1906; pages 30].

3 The Problem of the Origin of Species | By Charles Otis Whitman [Reprinted from "Congress of Arts and Sciences, Universal Exposition, St. Louis, 1904", Vol. V; pages 18 (repeated?)].

pigeon. The origin of the barred wing-pattern is thought to have been from the uniformly checkered style. Both patterns, by the way, occur among domestic pigeons!

Several sources of evidence are adduced to lead to this conclusion. One is that different wings (of *Columba livia*) may be arranged so as to show uninterrupted gradation from one extreme to the other. Another source of evidence is obtained by comparing in a similar way different wild species. We venture to suggest that neither of these sources of evidence show anything as to the direction of variation *thru time*; and this, it seems to us, would be the crucial point to be proven.

Another source of evidence is based upon the axiomatically-accepted idea that the male plumage is the most specialized (farthest evolved), the female next, and the juvenal least (that is, most primitive). This sequence, apparently in harmony with the orthogenetic theory, is shown in the wing-patterns of many wild species of pigeons, and Professor Whitman places much value upon this as indicating the direction of the development of the characters.

But we would object that it seems just as clear, in a great many species of birds, that the *juvenal* plumage is the *specialized* one (for the sake of protection), the female often as much, or nearly as much, specialized (and for a similar reason), and the male, therefore, the most *generalized*! This reverse theory accords better with the demands for survival, and would therefore be explainable by natural selection. There are many adaptive structures in the young, lost in the adult because useless; for instance, the calcareous nodule on the tip of the chick's bill. Ontogeny does not repeat phylogeny in every detail.

The best point in proof of the theory of orthogenesis was obtained thru the breeding and selection of tame pigeons. It was found that artificial selection could accomplish the reduction of the number of checkers, but would never lead from bars to checkers. The author concludes from this that "the direction of evolution can never be reversed." Hence the direction of evolution in the present case is from the checkered pattern towards the barred. As there seems to be no significance at present for these markings (either directive or protective), they appear to the author to exhibit an instance of orthogenesis. We must confess that, while we do see several such cases of traits exhibited in progressive series (if properly arranged), we do not clearly see evidence of an active variation thru time in any one direction.

We are pleased to remark that Professor Whitman, after careful consideration, concedes but little probability to the frequent occurrence of mutations, according to the theories upheld

by Hugo de Vries. Mutation, the abrupt appearance of new species without gradual successive and continuous transitional stages, must be rare among birds, if it occurs at all.

However, we cannot here take space to carry on a discussion of the problem of the origin of species, which is still the greatest problem in biology. What a field there is in ornithology for the student of evolution! The very fact that birds have been so thoroly worked systematically and geographically is all the more reason why this is a particularly advantageous field for such studies. And yet we hear of young men at college being advised to direct themselves to investigation in any other group than birds: "Birds are too well worked"!—J. G.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

NOVEMBER.—The Club met November 24, 1906, in the Barbara Jordan Library of Ornithology at Stanford University, California.

Vice-president Fisher occupied the chair. The minutes of the previous meeting were read and approved. The following proposals for membership were made: John W. Martin, 339 N. First St., San Jose, Cal., by D. A. Cohen; Miss Flora A. Randolph, 1706 Walnut St., Berkeley, Cal., by D. A. Cohen; Prof. O. P. Jenkins, Stanford University, Cal., by H. O. Jenkins.

The following were elected to active membership: Chas. Reining, 601 Webster St., Palo Alto, Cal.; F. W. Weymouth, 326 Lytton Ave., Palo Alto, Cal.; John E. Thayer, Lancaster, Mass.; Henry F. Duprey, 919 Morgan St., Santa Rosa, Cal.

Nominations for officers for 1907 were made as follows: President, Dr. F. W. D'Evelyn; senior vice-president, Bertha L. Chapman; junior vice-president, Rollo H. Beck; treasurer, H. T. Clifton; secretary, H. O. Jenkins.

The program was now taken up. Prof. V. L. Kellogg favored the Club with an interesting resume of his forth-coming work on the Mallophaga, touching particularly on the peculiar distribution and habits, and the resulting formation of species, of these external bird parasites. N. K. Carpenter read a paper entitled, "A Season with the Pacific Horned Owl", and brought out some very interesting facts in regard to the life history of this bird.

Mrs. Park then spoke to the Club concerning the passage of a Bird and Arbor Day Bill in the California Legislature. Thereupon the following resolutions were adopted:

WHEREAS, it has come to the knowledge of the Cooper Ornithological Club that an effort will be made to establish in the State of California, by act of Legislature, a Bird and Arbor Day, to be observed by the Public School children; and

WHEREAS, the observance of this day is not to be made

at all compulsory, and the day is not to be constituted a legal holiday, therefore be it

Resolved, that the Cooper Ornithological Club heartily approves of and endorses this movement as one of great educational importance which will tend to secure better protection for our native birds, and be it further

Resolved, that a copy of these resolutions be placed on the Minutes of this Club, and published in the January, 1907, issue of THE CONDOR.

H. O. JENKINS, *Secretary*.

SOUTHERN DIVISION

NOVEMBER.—Residence of Joseph Grinnell, Pasadena; November 30, 1906. Meeting was called to order by President Howard, with members Grinnell, Morcom, Clifton, Willett, Owen, Joseph Dixon, Watson, Taylor and Law present, and as visitors Messrs. James Dixon, and Howard Wright. The minutes of the last meeting, Oct. 3, 1906, were read and approved.

On motion duly carried, the Secretary was instructed to cast the unanimous ballot of the members present, electing Clarence B. Linton to active membership; this formality was complied with by the Secretary.

The applications for active membership of Reginald Rogers, of Santa Barbara, and C. M. Harris, Willard Chamberlain, and Arthur Howard, of Los Angeles, all proposed by O. W. Howard, were read and filed for final action at the next meeting.

Mr. Grinnell urged on all those present, the importance of sending in all notes on Los Angeles County birds, as the compilation of the new list will soon be under way. A great deal of data has been gathered since the previous list, and all of this should be placed at Mr. Grinnell's disposal as soon as possible. Mr. Grinnell also expressed his desire for notes on comparative bird populations, to the end that valuable information relating to increase or decrease of certain species might be recorded.

A very interesting paper by Wright M. Pierce on the dotted canyon wren was read by the Secretary in the absence of the author. Mr. Pierce described vividly his observations of a brood that was raised in a deserted miner's cabin in a canyon near the foot of Old Baldy.

After an inspection of several interesting series of skins from Mr. Grinnell's private collection, dainty refreshments, served by Mrs. Joseph Grinnell and Miss Grinnell, wound up a very enjoyable evening. Adjourned.

J. EUGENE LAW, *Secretary*.

DECEMBER.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was called to order by President Howard Saturday evening, Dec. 29, 1906, at

the residence of H. J. Lelande, 1320 E. 15th Street, Los Angeles, with members Lelande, J. Grinnell, Clifton, Cooper, Alphonse Jay, and Law present, and as visitors Messrs. Fordyce Grinnell and Willard Chamberlain.

The minutes of the last meeting were read and approved. Applications for active membership were proposed as follows: Austin Paul Smith, La Jolla, Cal., by H. W. Marsden; Jesse C. A. Meeker, Danbury, Conn., by O. W. Howard; John F. Ferry, Field-Columbian Museum, Chicago, by H. S. Swarth.

On motion by Mr. Clifton, seconded by Mr. Lelande and duly carried, the Secretary was instructed to cast the unanimous ballot of the members present, electing to active membership, the following named persons already presented: Henry K. Coale, Chicago, Ill.; C. M. Harris, Los Angeles, Cal.; Willard Chamberlain, Los Angeles, Cal.; Arthur Howard, Los Angeles, Cal.; Reginald Rogers, Cheshire, Conn.

A communication from Dr. Frederick W. D'Evelyn, the nominee for President of the Northern Division, was read and heartily endorsed by those present.

An interesting letter from our former and long-time President, Mr. F. S. Daggett, now of Chicago, was read, describing an outing with a few of the old standbys early in November. Messrs. Dean, Gault, Woodruff, Swarth, and Daggett composed the party. A half dozen good winter visitors were observed, including white-wing and American crossbills, and snowflakes. Our eastern brethren certainly are entitled to our heartfelt sympathy when they take a winter trip. It would be rubbing it in too much to mention the names of the dozens of good birds an observer, perfectly comfortable in a khaki shirt outfit and sombrero, can see in a day's winter stroll in this locality. Ask Mr. Daggett if it's not so!

The club then proceeded to nominations of officers for 1907. The following nominations were made and nominations closed in each case on proper motion: For President, Mr. G. Frean Morcom, Pasadena; for Vice President, Mr. G. Willett, Los Angeles; for Secretary, Mr. J. Eugene Law, Hollywood; for Treasurer, Mr. W. Lee Chambers, Santa Monica. Towards the close of the evening Mrs. Lelande served elaborate refreshments. Adjourned.

J. EUGENE LAW, *Secretary*.

NOTE.—The lateness of this issue of THE CONDOR is regretted by all concerned; but it is one of those things that can't be helped, and is liable to occur sometime to everyone. The reason in the present instance is the serious illness of our printer and simultaneously of several of his office force.—ED.

WANTED — Ridgway's "Nomenclature of Colors;" J. J. Audubon, odd vols of the octavo edition, 1840-44 or later re-issues. I will give cash, or offer good exchange in rare Western sets. — W. LEE CHAMBERS, Santa Monica, California.

WANTED—Birds' eggs for cash, either in large or small lots. Sets and sets with nests and large rare singles especially desired; but they must be strictly first-class and with data. Send list with lowest prices.—DOCTOR M. T. CLECKLEY, 457 Greene St., Augusta, Ga.

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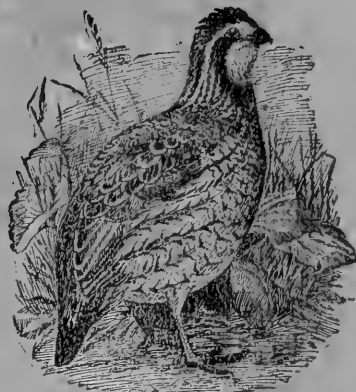
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THE CONDOR

A Magazine of Western
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Volume IX

March-April, 1907

Number 2



W.K.F.

COOPER ORNITHOLOGICAL CLUB

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Entered as second-class matter May 4, 1906, at the post office at Pasadena, California,
under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, 871 No. Lake Ave., Pasadena, Cal.

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CLOSE RANGE VIEW OF A DOMESTIC INCIDENT IN THE HOME-LIFE OF THE AMERICAN WHITE PELICAN;
YOUNGSTER WITH ITS HEAD DOWN THE PARENT'S GULLET FOOD-GATHERING; PARENT HAS JUST

RISEN UP TO SHAKE OUT THE YOUNGSTER, WHILE THE LATTER IS HOLDING ON
WITH ONE WING OVER HER NECK, LOATH TO LEAVE

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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume IX

March-April 1907

Number 2

AMONG THE PELICANS

BY WILLIAM L. FINLEY

WITH PHOTOGRAPHS BY HERMAN T. BOHLMAN

TWO species of pelicans are found on the Pacific Coast, the white (*Pelecanus erythrorhynchos*), and the Brown (*Pelecanus californicus*). The brown pelican is one of the commonest fishers on the southern California sea-coast, while the white pelican is a bird of the interior. On the Coronado Islands the brown pelican nests abundantly and from this place the birds fly for miles up and down the coast to their fishing grounds.

Altho heavy and clumsy in shape, the pelican is as expert as the kingfisher at diving. From a height of thirty or forty feet, he drops like a plummet into a school of small fish and rises to the surface with pouch filled with fish and water. As the diver stretches his neck and draws his bill straight up, the water runs out and the fish are left. The head is thrown back and the whole catch is swallowed at one gulp. But the pelican does not fish for himself alone, for he is generally followed by one or more thieving gulls.

One day while standing on the wharf at Santa Monica, I saw a brown pelican flapping along with a pair of gulls a few feet behind. A moment later the big bird spied a fish, for with a back stroke of his wing, he turned to dive. He gathered speed as he went and with wings partly closed and rigid, he hit the water with a resounding splash. The lower mandible of his bill contracted and opened his pouch that held about as much water as the weight of his body. He came to the surface and was in a helpless condition till the water ran out, and at this moment he was pounced upon by the swift-moving gulls who snatched the fish and were away before the slow pelican could retaliate.

At another time I saw a band of a dozen pelicans hovering over a school of fish. The birds rose from the surface, swung around till about twenty feet above, and two or three of them dropped into the water at a time. A bevy of twenty gulls were fluttering around to pounce on every pelican that dove. The instant

one dropped and came up with fish, he was surrounded by a bunch of gulls, each scrambling to get a nose in the pelican's big fish bag.

The summer of 1895, we had a chance to make an intimate study of the white pelican in its home on the lakes of southern Oregon. I have never seen this bird plunge for its fish as the brown pelican does, but those we watched always swam along and with a swift motion scooped up the fish here and there from the surface. The birds were so plentiful about Tule Lake that we were anxious to find where they were nesting.

We set out across Tule Lake for the peninsula which was fifteen miles distant. Our fourteen-foot boat was well loaded, but a good wind to the rear helped us along. The further we went, the stiffer the wind grew. At first we used our big wagon-umbrella as a sail. I stood in the bow and held it, and we plowed along,



AMERICAN WHITE PELICANS AND FARALLONE CORMORANTS NESTING
TOGETHER ON ISLET AT SOUTH END OF TULE LAKE, ON
THE CALIFORNIA AND OREGON BOUNDARY LINE

but at times the wind came in puffs, and once or twice our sail was almost demolished and I nearly landed in the water. The boat began to ship water and we both had to exert our best energy at the oars as the wind veered. Not till dusk did we reach the rocky shore of the peninsula, only to find that the treacherous point forbade a landing. Later we found a small sandy beach where we waded ashore and made a rough camp for the night.

This peninsula, upon which we found the crater of an extinct volcano, extended out from the east shore. The neck at the narrowest point was only fifty feet wide and across this we dragged our boat and set out for the lower end of the lake.

We paddled up the inlet for two miles and came to a rocky island containing a colony of Farallone cormorants. Here on the rocks, in a space of twenty-five by

fifty feet, we found one hundred and ninety nests, containing about three hundred birds and half as many eggs not yet hatched.

That night we camped opposite the cormorant rookery and just below what is known as the crater. The next day we rowed on south past Rattlesnake Island. In the afternoon we made camp across from another large rookery where the cormorants and pelicans were nesting. This island held two hundred and fifty cormorant nests—about two hundred and seventy-five young birds and two hundred eggs. The cormorant nests were built up of sticks, but the pelicans simply made a depression in the sand for their eggs.

This was the only colony of pelicans we found after cruising for two weeks on Tule Lake, altho we had seen a flock of several hundred birds that fished about the Lake and roosted together at night on one of the sandbars. They were very likely last year's birds and being immature, had not yet begun to nest.

When we crossed over to Lower Klamath Lake, we found it very different from the south end of Tule Lake, where we had fairly good places to camp. Extending for several miles out from the main shore was a seemingly endless area of



HERD OF YOUNG PELICANS; NOTE THE TULE-THATCHED BLIND AT RIGHT, FROM WHICH THE CAMERA WAS OPERATED IN OBTAINING MORE INTIMATE LIFE-STUDIES

floating tule islands, between which flowed a network of channels. These islands furnished good homes for the great flocks of pelicans that return each spring to live about these lakes and rivers that teem with fish. The tules had grown up for generations. The heavy growth of each year shoots up thru the dead stalks of the preceding season till it forms a fairly good floating foundation. On the top of this the pelicans had perched and trodden down the tules till they formed a surface often strong enough to support a man. But it was like walking on the crust of the snow, for you never knew just when it would break thru. However, these treacherous islands were the only camping places we had during the two weeks we cruised the Lower Klamath.

We rowed on among these islands and found the pelican colonies scattered along for about two miles. There were eight or ten big rookeries, each containing from four to six hundred birds. Besides, there were about fifteen others that had all the way from fifty to two hundred birds. The birds nested a few feet apart on these dry beds, each laying from one to three eggs.

The pelican season begins in April after the snow and ice have melted, and

lasts till August and September when the young are able to care for themselves. In June and July when we visited the colonies, the young were able to walk and swim about, but the wing feathers had not yet developed flying strength, for the birds were still in the downy stage.

It takes about a month for the pelican to hatch its eggs, and the baby pelican is naked, helpless and ugly, and has to be shielded from the sun by its mother. Its ugliness increases with age till the youngster is covered with white down. The young birds stick close to the nesting site where they are fed by the parents, until,

when about six weeks old, they begin to run about and mingle with the other young birds.

It would be difficult to tell how an old pelican can recognize her own, but she seems to do it, for nesting is not a communal matter. As soon as an old bird alighted in the rookery, she was besieged by half a dozen young ones, but I never saw one of the parents feed till she had apparently made some selection as to the young.

The half grown pelicans stood around with their mouths open, panting like a lot of dogs after the chase on a hot day, their pouches shaken at every breath. When we went near one of the colonies, the youngsters went tottering off on their big webbed feet with wings dragging on this side and that as if they were poorly handled crutches. The first thing they did when we approached was to vomit up fish and then stagger on with the



HALF-GROWN YOUNG PELICAN WITH WING QUILLS PARTLY GROWN, BUT BODY YET COVERED WITH DOWN

crowd. Following along after a band of young pelicans was as bad as crossing a battlefield where the victims were fish, for the carcasses were strewn all along in the wake of the procession. The youngsters huddled together by hundreds in a small space. Those on the outside pushed and climbed to get nearer the center, till it looked worse than any football scrimmage I ever saw. I watched one large bird rush for the center, bucking over three or four others and finally landing astraddle the neck of another. When we went nearer, those on the outside began to circle the ends and around and around the whole mass revolved as it moved off. Soon after the little gluttons retraced their steps to pick up the fish dinners that had been left behind.

One might wonder how such a huge-billed bird could feed a helpless young

chick just out of the egg, but it was done with apparent ease. The parent regurgitated a fishy soup into the front end of its pouch and the baby pelican pitched right in and helped himself out of this family dish. As the young bird grew older and larger, at each meal time he kept reaching further into the big pouch of his parent until finally when he was half grown, it was a remarkable sight. The mother opened her mouth and the whole head and neck of her nestling disappeared down her capacious maw while he hunted for his dinner in the internal regions.

In this wide area of low islands and water, it was necessary, since we wanted to study the pelicans at close range, to adopt some method of hiding. So taking our large wagon-umbrella covered with a piece of green canvas that hung down around the sides, we planted it among the tules at the edge of one of the largest colonies and covered the top well with reeds. While we both remained in the blind, the pelicans were slow in returning, but when one of us departed, the old birds seemed to think we had both gone and soon began sailing in to feed the young.

I sat under the umbrella and reeds with my reflex camera pointing out thru a slit in the canvas. There were four or five hundred young pelicans bunched along on the platform of tules only a few yards away. A few minutes later the first old bird pitched awkwardly in and alighted near by and several young birds waddled forward to meet her. She caught sight of a piece of partly dried fish that had been disgorged, grasped it in her bill and tossed it away before one of the youngsters could grab it. One of the other birds rushed for it, but she was ahead and threw it as far as she could again, and the third time she tossed it over in the tules where it could not be reached.

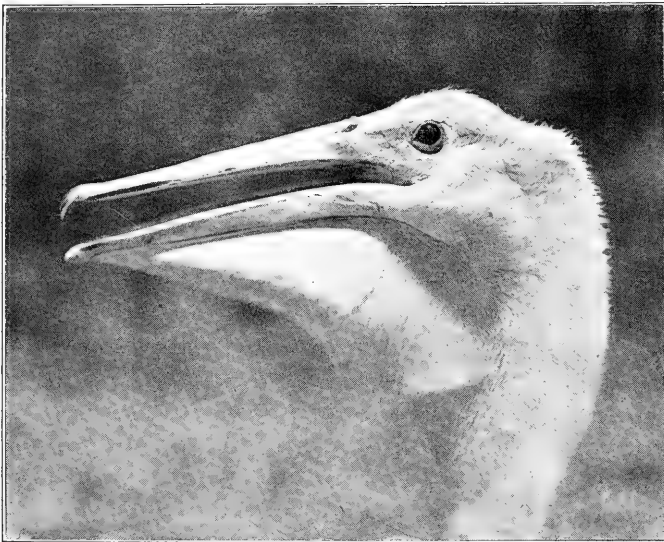


IN THE SWIM AT AN EARLY AGE

Just then another mother dropped into the nursery and she was besieged by several ravenous children. Each began pecking at her bill, trying to make her feed them. But she moved off in apparent unconcern, or perhaps she was making some selection as to which one to feed. She waddled about till one of the youngsters began a series of actions that were very interesting. He fell on the ground before the old bird, grunting and flapping his wings as if he were in the last stages of starvation. Still the mother did not heed his entreaties and the youngster suddenly got well and began pecking at her bill again. The old bird backed up as if she were getting a good footing and slowly opened her mouth to admit the bill of the little pelican. She drew her neck up till the ends of the upper and lower mandibles were braced against the ground and her pouch was distended to the limit. Jonah-like, down the mother's throat went the head and neck of the child till he seemed about to be swallowed had it not been for his fluttering wings. He remained buried in the depths for about two minutes, eating everything he could find. Nor did he withdraw from the family cupboard voluntarily, but when the

supply was exhausted or the mother thought he had enough, she began slowly to rise and struggle to regain her upright position. The youngster was loath to come out and flapping his wings, he tried in every way to hold on as she began shaking back and forth. The mother shook around over ten or twelve feet of ground till she literally swung the young bird off his feet and sent him sprawling over on the dry tules.

For a few moments the youngster lay dazed, then as if coming to his senses, he seemed to go raving mad. I never saw such an apparent show of temper in anything but a badly spoiled child. He whirled around once or twice, grasping his own wing in his bill, shaking and biting it. Then seeing one or two other young birds standing near, he plunged headlong at them, jabbing right and left with his beak, while they rapidly retreated out of his way. By that time the wrath of the youngster seemed spent, for he fell sprawled-out, and soon went sound asleep in the sun.



YOUNG PELICAN, PANTING FROM THE HEAT

It is surprising to see the size of a fish a pelican can handle. In watching among the rookeries of young pelicans, I have often seen the old birds bring in fish from eight to ten inches in length, for they seem to handle such a size with apparent ease. But I have also seen lake trout eighteen inches in length that have been brought in by the old pelicans. Whether these big fish were caught alive by the old birds or just picked up dead, I do not know; but if a pelican gobbles

down a live fish of that size, I judge the bird would feel very like a dog being wagged by his tail.

The white pelican is a striking mark on the water and is very stately in flight. While cruising the broad lakes we were often deceived when the water was calm by thinking a white pelican was the distant sail of a boat. There is something so misleading in the reflection and the shape of one of these birds when it is floating in the sunlight far out on the surface of the water. At such a time a flock of them will look, for all the world, like a squadron of white war-ships.

It was a daily habit where the birds were nesting, for them to take an aerial promenade each morning. After returning from the fishing grounds and lounging about the nests for a while, the pelicans began to circle over the colony in a large company, rising higher and higher till they were almost lost in the blue. By watching we could occasionally see the faint flashes of white as the snowy breasts reflected a gleam of the sun. For hours the sky would glitter with these great



AN ADULT PELICAN JUST DROPPING INTO ROOKERY

birds as they soared about. Then it was thrilling to see some of them descend with rigid, half-closed wings. They used the sky as a big toboggan-slide and dropped like meteors, leaving a trail of thunder. Several times when we first heard the sound, we were deceived into thinking it was the advance messenger of a heavy storm and jumped up expecting to see black clouds rising from behind the mountains.

Portland, Oregon.



A HEAVY BIRD LIKE A PELICAN RISES FROM THE WATER
WITH DIFFICULTY, AND USES ITS FEET
IN GETTING A START

Copyrighted

MIGRATION AND NESTING OF THE SAGE THRASHER

BY M. FRENCH GILMAN

THIS bird, *Oroscoptes montanus*, was a favorite of mine from boyhood, tho I saw little of him, merely a passing acquaintance, as it were. He seemed to attend strictly to his own business, that of migrating, but was never nervous or flurried. He apparently never had time for frivolities or any side trips, tho I can't say that he hurried on his way. He would run to a bush, halt an instant, and then on to another. If bushes were far apart he would sometimes fly from one cover to another, halt, and then forward again. A worm in the interval, did not turn him aside; he would swallow it and move on. He knew just where he was going, and while in no haste to arrive, was not to be diverted from the straight and narrow path. He seemed to be aware that a straight line was the shortest distance between two points, and even if pursued could not be forced many points off his course.

These were my earlier impressions of his character and caused much interest and some observation of his migrating. These few notes on the travels of the sage thrasher were made in southern California and include territory about thirty-five miles long and three or four wide, San Gorgonio Pass, extending from Palm Springs on the Colorado desert, 500 feet elevation, to the summit of the Pass, 2500 feet elevation.

At Palm Springs the thrashers usually appeared about the middle of January, tho I have seen them there during the latter part of December. They came in from a southeasterly direction, across the desert, moving from bush to bush as I have described. Their rate of travel seems very slow in view of the fact that they always appear to be moving forward. Some seasons they would be a month in traversing the thirty or thirty-five miles, a speed of about a mile per day. I am satisfied that this is their average speed across the country I have mentioned, as I have observed it on short distances as well. I have seen the birds at all points between the two localities named, and the dates of observance practically coincide with the estimated speed of travel. I have noticed the birds five or six miles east of town and a week later they would appear a mile or two west of town. I walked a mile and a half to school, to the east of my home, and would see the first birds in the morning at the school end of the line. On my way home in the evening I would overtake them about a mile from where I had seen them earlier in the day.

Now I do not pretend to give these figures as an estimate of their rate of travel during the entire migration. To do so would be absurd, as their destination is so far from where I observed them. At a mile per day they could never reach their nesting place, raise a family, and get back to winter quarters. I do not know the nearest point where their nests may be found; but from some experience in their nesting haunts in southwestern Colorado, I believe some parts of the Mojave Desert would be promising.

In forming any theory of migration so much data is necessary that I hesitate. Any one, however, has some right to an opinion, and mine is that the sage thrasher migration is local rather than general. I have never seen them on their return trips in the autumn and some seasons they have failed to materialize in the spring movement. I saw them in their nesting places in Colorado as late as October 30, and judging from movements of some of our California birds in perpendicular migrations, these thrashers would not go to the Mexican line to spend the winter.

I should like to hear of observations from the Cajon Pass and points in the vicinity of Antelope Valley.

With this interest in the thrasher during migration it was with much pleasure I looked forward to studying him during the season of family cares; and when spring opened in southwestern Colorado I began sharpening eyes and pencil. But no thrashers appeared and I had about given up hope of seeing him in his summer home when a wagon trip thru part of Montezuma County down into the Southern Ute Indian Reservation gave me opportunity for a few observations. My time was limited and only superficial work could be done. I saw the first birds in the sage brush near Cortez, the county seat of Montezuma County, altitude near 6000 feet. They were rather tame, flying from brush along the roadside up onto fence posts. Two or three old nests were seen but the birds were not numerous.

From Cortez southward was a constant tho gradual descent toward the San Juan River. As the altitude decreased the number of thrashers increased and more old nests were seen. I had no time, while en route, for search, but during the noon hour I "took to the brush" and found the first new nest. It was in a thick sage bush (*Artemisia tridentata*) and was discovered by flushing the birds from an adjoining bush. The nest contained the shells of two freshly broken eggs, the cause of breakage not being apparent and the nest not otherwise disturbed. This was on May 31. Later in the day I saw two families of young birds that had just left the nest, one brood of nestlings not being able to fly sufficiently to escape capture and inspection. The discovery of these birds so nearly matured left me small hope of finding any eggs.

That afternoon I reached Navajo Springs, the Southern Ute Agency. The agency is near the New Mexico line and is located in a narrow pass between Ute Peak and a line of bluffs capped with the characteristic rim-rock of this country. A cut or arroyo begins a mile above the agency and extends down the pass, deepening all the while. A small stream of water was flowing along the bottom for possibly two miles before sinking. On each side of the cut was a strip of bushy or shrubby growth composed of sage brush, grease-wood (*Sarcobatus vermiculatus*), and another desert shrub not familiar to me. Locally it is called "chico-brush" and is a good indication of alkali in the soil.

In this growth were many thrashers, some few lark buntings and several mocking-birds. Taking advantage of what little daylight remained, after putting up my team I made a hasty search in the immediate vicinity of the agency and found two nests with eggs. The first was in a sage two and one-half feet from the ground and contained seven beautiful greenish-blue eggs specked with rich brown. This nest was made of dry twigs from sage and grease-wood, and was lined with sage bark, horse hair, goat hair, and rabbit fur. The second nest was also in a sage bush and about two feet from the ground. It was similar in construction to the first but the lining contained no rabbit fur and the set was of six eggs. Both sets were about one-third incubated.

June 1, I was again afield for a short time and found two more nests. One was in a grease-wood two and one-half feet from the ground and contained six eggs about as much incubated as those found the day before. This nest was similar to the others except for a distinct arch or platform of dry twigs just above it. The arch looked more like design than accident but I formed no decided opinion in regard to it. The fourth nest was in a sage two feet from the ground and contained three fresh eggs. In addition to these thrashers' nests I found a lark buntings' nest with five fresh eggs, and a mocking-birds' with five partly incubated eggs; also some young chipping sparrows.

June 2, on my way home I found two more thrashers' nests. Both had been scenes of violence or disturbance and were deserted. One contained three eggs partly incubated and then dried, while the other had three eggs simply rotten, without any sign of incubation. One nest was in a sage, the other in a grease-wood and both about two feet from the ground. There was no clue to the cause of either catastrophe.

Of the seven new nests found, three had been disturbed and probably the matrons of the last two were killed. I offer no solution as to what was the disturbing element. I did not hear the birds sing at all and they seemed rather retiring in disposition, tho not particularly wild. They left the nest quietly in thrasher-fashion on the opposite side of the bush when I was a few feet distant. In no case except when I caught one of the young that had left the nest did they show any parental concern. In nesting as well as in migrating they seem to have a go-as-you-please gait. During the three days observation I saw incomplete sets of fresh eggs, sets partly incubated, deserted nests and eggs, and young birds grown and partly grown.

Fort Lewis, Colorado.

AN EXPERIENCE WITH THE SOUTH AMERICAN CONDOR

BY SAMUEL ADAMS

WITH PHOTOGRAPHS BY MESSRS. ADAMS AND MARTIN

A COLLECTING party composed of Mr. H. T. Martin of the University of Kansas and myself, then a recent graduate of that school, spent the latter part of 1903 and the early half of 1904 in southern Argentina, the greater part of the time in Patagonia. It has been known as far back as Darwin's time that rich fossil beds exist in this country. The reading of the reports of three fossil-hunting expeditions to Patagonia, made by the late J. B. Hatcher of Princeton, led us to go to this field, where many rare and interesting specimens rewarded the party's efforts.

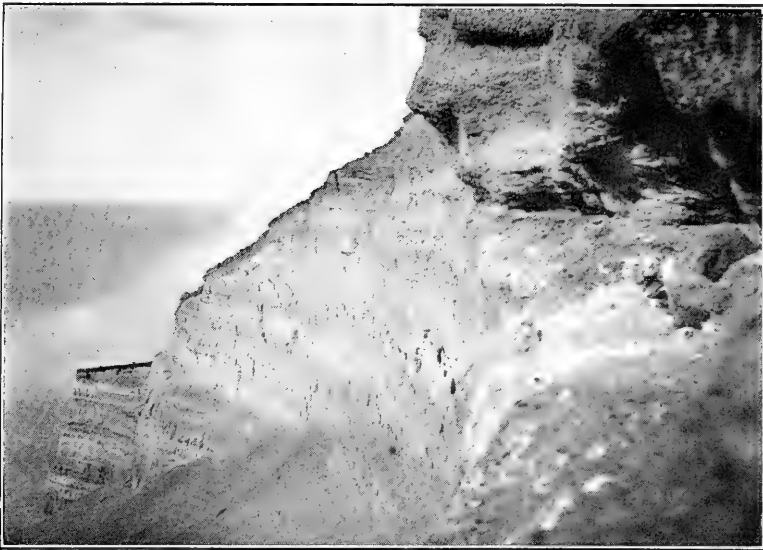
The pampa, or great central plateau of Patagonia, extends from the foothills of the Andes to the Atlantic coast where it ends by an almost perpendicular fall of three to five hundred feet to the seashore. The waves and currents continually undermine the cliffs and the waters wash away the fragments and debris where they fall below. While prospecting for fossils in these barrancas, as the cliffs are called, near the mouth of the Rio Gallegos (52 S. Lat.) condors were frequently seen flying about the tops of the cliffs and over the plain.

My previous interest in the South American condor (*Sarcorhamphus gryphus*) had been aroused by numerous descriptions which I had read of its marvelous powers of flight, and my first thoughts on seeing the bird in the freedom of its native habitat were to verify the statements of early observers. Time and again I found myself prone on my back intent on this feathered giant as he wheeled and turned in majestic circles and curves without the slightest apparent effort until he disappeared on the horizon or I tired of watching him.

As our camp was moved from time to time to facilitate our work we had a good opportunity to examine the barrancas thoroly and at last encamped near a point about which a pair of condors were seen almost daily, our attention being

called to this particular pair when we first neared the point by their darting toward us with a rush of wings and threatening screams. On the clear cold autumnal morning of March 18, 1904, Martin and I equipped ourselves with firearms and went out to capture the birds. As he neared the edge of the pampa the birds soared out from the cliffs and circling came back toward him. His first shot tipped a wing of the male which wheeled and came down toward the beach where I had stationed myself. The second shot killed the female which fell on the ocean side of a landslide, high above the beach.

At this point the pampa has at some time in the past broken away in one gigantic piece, at least four hundred feet long and about one hundred and fifty feet across the top. The whole lump had slipped downward and outward about two hundred and fifty feet from its original position, leaving a perpendicular wall and wide crack or hollow which was then partially filled with earth and stones worn from the exposed surfaces. It was impossible from the beach to see the edge of



NESTING SITE OF THE SOUTH AMERICAN CONDOR, ON SEA-CLIFF; NOTE
THE YOUNG BIRD ON THE NEST-LEDGE TO THE RIGHT

the pampa immediately above on account of the landslide, which towered aloft two hundred and fifty feet; and on the other hand, the slope of the landslide oceanward, as well as the beach, was invisible from the pampa above.

The male tho within two hundred feet of the beach before he saw me below him was able to continue his gliding descent for at least a quarter of a mile up the beach against the wind, and reaching the ground with wings outstretched to gain advantage from the breeze ran with gigantic strides up the hard pebbly shore. In spite of his broken wing he led me a weary chase for more than a mile and a half before I gained sufficiently on him to plant a fatal shot from the little twenty-two I carried, just as he walked into the surf; and in order to finally get my hands on him I was obliged to run into the water to prevent his being washed entirely out of my reach. The female was found on a dangerous slope two hundred feet above the base of the cliff.

On the second day, after preserving the skins, I went up on the pampa to the edge of the cliff where the landslide had occurred and with glasses discovered a young condor on a ledge in the perpendicular wall twenty feet below the edge of the cliff. By means of ropes held at the surface by stakes, with Martin's help, I climbed down to the ledge where the orphaned fledgling as large as a turkey crouched in the most abject loneliness. She showed some fight as I worked my way toward her, but slipping a noose over a foot outstretched threateningly toward me she was easily captured and drawn to the pampa above.

The shelf where the young bird was found was a narrow ledge some fifteen feet in length by three feet in greatest height and width. The nest, if it may be called such, was nothing more than a slight depression of the shelf at its widest and



YOUNG SOUTH AMERICAN CONDOR IN CHARACTERISTIC
ATTITUDE ON NEST-LEDGE

highest part. There was nothing in it but the fine gravel and small fragments of broken fossil shells from the strata out of which the shelf was hollowed. The edge was white with excrement, and the epiphysis of a sheep's limb-bone was the only sign of food. A small shelf just above the nest, in the wall of the cliff, served as a roosting place, and its edge, too, was white-washed.

The heights of the Andes are generally regarded as the home of the condor tho it is frequently seen soaring over the pampa far from the foothills. Within the past twenty years the grassy slopes and valleys along the coast and rivers of Patagonia have been dotted with extensive sheep farms, where sheep are raised for wool alone. Most of these animals die on the pampa of age or exposure and the abundance of food has probably induced the condor to extend its breeding

range to the Atlantic coast where it and the native wild dog are the chief scavengers.

The measurements of our group of birds tally with the average given for the condor, tho it is said that a species inhabiting the heights of Equador has a much larger extent of wings and it may be a larger bird. The male's length was four feet one inch, with an extent of wings of nine feet. The female, the exception in this family of vultures, was smaller than the male, measuring but three feet seven inches in length, with a wing extent of seven feet eleven inches. The young bird (there are said to be usually two) was a female, three feet in length with what seemed unusually large feet. She was clothed in a mouse-colored down with wing pinions and tail feathers just approaching maturity. Her collarette of white had not yet appeared. Judging from the history of the condor, since it is said to spend the first two years of its life in the nest, this young bird must have been at least a year old.

The question of the age of the young specimen is an interesting one, in view of



MALE (AT RIGHT) AND FEMALE SOUTH AMERICAN CONDORS;
PHOTOGRAPHED FROM FRESHLY-KILLED SPECIMENS

the fact that the statement is made in at least one publication that the young condor remains in the nest for nearly two years. Our specimen was taken during the latter part of the first autumnal month in the southern hemisphere. If it was born during that season it could not have been more than four or five months of age. It does not look reasonable that the bird could have been in the nest since the previous warm season. The snow and ice of the winter of 1904 in Patagonia came during the early part of May leaving little time for the maturity of the fledgling preparatory to the weathering of so severe a season since it would still have to depend on its parents for food. From the immature condition of its feathers, tho it was large in body, I am of the opinion that this bird was about four or five months old, and that it would have remained in the nest until the following spring when it would have been able to fly and hunt with its parents, thus leaving the nest in one year. There being but one young bird in the nest would tend also to discredit the accuracy of the statement that there are two eggs deposited in a nest,

Nearly every picture that I took of the young specimen shows her in the act of hissing. The sound was made well back in the throat, like the passage of air thro a moderately large opening, a rather subdued sound, not unlike the sharp hiss made by the human tongue and teeth. The note of the old birds was merely a single menacing cry, perhaps most truly characterized as a scream, uttered as they darted toward us when we approached their nesting place. This cry might be compared to that of the red-tailed hawk so commonly heard in the big timber of the bottom lands of Kansas.

Unfortunately the skin of the male bird spoiled in transit but I still have the skull and wings. The female skin Martin sold to an eastern museum, I understand, while the skin of the youngster is mounted in the museum of the State Normal School at Greeley, Colorado.

Topeka, Kansas.

NESTING WAYS OF THE WESTERN GNATCATCHER

BY HARRIET WILLIAMS MYERS

I HAD always admired him—this dainty little blue-drab bird with his white breast, long black tail with conspicuous white outer shafts, and blue-drab mantle, so, when on the morning of July 9, I came upon him and his mate engaged in household duties, my delight was boundless. We had come up from Los Angeles, my companion and I, for a week's stay in the Little Santa Anita Canyon situated in the Sierra Madre Mountain range.

The first nest of the gnatcatcher (*Polioptila caerulea obscura*) that we found was near the top of a holly bush that had grown so tall that it was more like a tree than a shrub. The nest was in an exposed, upright crotch, and tho overhanging branches sheltered it from the sun the most of the day, not a twig or a leaf obstructed our view of it. It was cup-shaped, being much deeper than broad, and was made of fine gray material that just matched the tree trunk. There were three birds in the nest and we judged them to be somewhat less than a week old.

We stationed ourselves among the tall weeds in a shady spot and the birds, paying not the least attention to us, went on with their feeding, thus enabling us to observe them under natural conditions. Another holly bush grew close by the nest tree, and when we first found the nest and saw that each bird came into this neighboring holly before feeding, we thought it was fear of us on their part that made them do it; but we soon found that this was a regular habit of theirs. In all the hours that I watched at the nest, I never saw them go directly to the young. Even when they came from the nest side they flew past and into this one tree, where they hopped about in it as if in search of food, then usually down onto a bare twig, and from there straight across the several feet of clearing to the nest. It seemed like such a waste of time, but it was their way.

These western gnatcatchers were so much alike that our first thought was whether we would be able to tell the male and female apart. They looked exactly alike except that one bird seemed in better plumage, looking slicker and smoother than the other. However, we had not watched long before we discovered that one of the white tail-feathers of one bird was shorter than the other. It looked as if a new white feather was just coming in, which proved to be the case. It was on the

bird whose plumage was rather mussed, and as the female would naturally not look quite so slick, after her setting, as the male, we put this bird down as the female. Then, too, she seemed to be not quite so matter-of-fact and business-like in her habits, there being more femininity about her which expressed itself in the way she loitered by the nest, often flying past just above the nestlings' heads, a thing the slick bird never did. Several things in our subsequent watching proved, to our own satisfaction, that this was, indeed, the female bird, one being that the well-kept bird was the singer.

In the three hours that I first watched at the nest the birds fed fifty-four times, an average of three and one-half minutes apart. The shortest interval was one-half minute, the longest nine minutes. The male fed about twice as often as the female. Several times they both came at once with their offerings. It was amusing to see them hurry at these times. The bird that came first always shortened its preliminaries when it saw its mate coming, and the last bird arriving, seeming to fear it would be left behind in the feeding, did not stop for any extra flitting about, but in a grand scramble both birds made a rush for the nest, arriving, usually, at about the same time and feeding at once. Tho we could see the wobbly heads stretched up and the big mouths opened to receive the food, we could not tell whether there was any method or regularity pursued by the parents in feeding.

At ten o'clock the sun beat down upon my shoulders relentlessly. I had been slipping along on the big stone on which I rested, striving to keep out of its pitiless rays, but only successful for a few minutes. The nest at this time was also in the sun and I knew how to sympathize with the helpless nestlings who were unable to slip away from its hot rays. At four minutes past ten, the father came to feed. He seemed to take in the situation for, having fed, he slipped onto the nest and sat lightly above his skinny babies. For five minutes he shielded them before the mother came, when he slipped off and was away while the female took her place on the nest and shielded the young with out-stretched wings. One little fellow showed from my side of the nest as he stretched up to reach the shadow made by his mother.

The female stayed eleven minutes on the nest this time and three times the male brought her food which she in turn fed to the nestlings beneath her. At the expiration of the eleven minutes she left the nest and did not come back for ten minutes. During her absence the male fed four times, but did not attempt to shelter the nestlings at this time. However, in the hour that I watched in the sun the male took the nest four times, remaining, with the exception of the first time, not more than two minutes, and generally leaving when the female came. Once, however, he sat on the nest and she fed a young bird beneath him. It was interesting to note that when the female was on the nest the male always gave the food that he brought, to her, while the female did not give hers to the male but directly to the young.

The call note of these gnatcatchers is a twanging one: a nasal "tzee" given sometimes once, sometimes several times in rapid succession. This nasal note is usually kept up while the little sprites are foraging for food, but we noticed that they were rather quiet about the nest. Quite often, but not always, the male gave the single "tzee" just before feeding the young; on the contrary the female gave it, if at all, *after* feeding, as she left the nest. Twice in the course of my watching, I heard the male's song. It was a low warble with something of the nasal twanging about it; still, on the whole, it was very pretty.

On the morning of July 11, as I climbed the hill that led to the nest shortly after six o'clock, I heard the gnatcatchers making a great commotion, and coming in sight of a small tree I saw that some large bird was making all this trouble.

Stoically and unflinchingly he sat on a limb among the leaves, while the two blue-drab midgets were attacking him vigorously. Coming closer to the tree I saw that it was a California shrike that these little birds were fighting, and tho he seemed to be minding his own business, the small birds resented his presence in their vicinity and kept up the attack until he left their neighborhood.

On this same morning from 7:25 to 8:25, the birds fed thirty-five times, less than two minutes apart; the male twenty-seven times, the female fourteen. The next morning, in the hour from 6:37 to 7:37, the birds fed forty-six times, the male thirty-six and the female twenty-four times. In looking over my notes I find that the birds fed more often early in the morning than later in the day.

In five hours, 6:30 to 11:30, they fed one hundred and fifty-two times, or an average of thirty-eight times an hour. Allowing sixteen hours to their day, we can estimate that they fed six hundred and eight times. The word "gnatcatcher" proved to be a misnomer, the food brought so often being small white worms.

On the night before our departure for the city, my companion returned to camp and announced that she had found another gnatcatcher's nest. It was built on the south side of a tall, straight eucalyptus tree about twenty feet from the ground, its only supports being the tiny twigs that grew out from the side of the tree. Like the other nest it was small across, but deep, and so exactly matched the gray of the tree that it was hard to locate, even when one knew where it was. The tree grew near the road and tho we had passed it many times every day, it remained unknown to us until the vociferous calling of the young revealed their whereabouts.

There were three birds in the nest and we were more than pleased to see that they were much larger than the others we were watching. These little fellows were fully feathered and looked just like their parents except that their tails were shorter. They were very uneasy in the nest and it seemed evident that they would not stay there long. They noticed the old birds when they came near the tree and called loudly to be fed. We had never heard the other nest of young make any noise or take any notice except as the old birds put the food in their mouth.

An oak tree grew so near the nest tree that its branches almost touched the latter. This tree was used by the gnatcatchers for their preliminary jumping ground when they did not go directly to the nest; but quite often they came right to the nest, or approached it by way of a lower twig, leaving by one of the upper ones. These birds fed oftener than the others, one hundred and five times being the record for two hours that we watched them. Little wonder that they had no time to waste in unnecessary movements with such vigorous youngsters making demands upon them!

At 7:37 A. M., as we watched at the nest, we believed our dearest hopes were to be realized, and that we were to see these youngsters make their debut into the world; for suddenly one fluffy ball came fluttering forth from its gray home, landing on one of the twig supports. But, alas, all too quickly our hopes were crushed, for no sooner had the nestling stopped himself than he turned about and scrambled post-haste, back into the nest. It was really very funny to see him. He cuddled down into the nest after this exertion as if he were glad to rest. Again in the afternoon about 1:30 a young bird left the nest. Standing on the edge he fluttered his wings twice as if trying to get up courage, and then the third time he flew out onto a twig, perhaps six inches from his home. This time as before, the stay on the twig was a short one, the bird hurrying back to the nest as in the case of the morning trial.

We watched at this nest until 4:30 P. M., when it was time for us to start for

the station. I feel that could we have stayed one day longer we should have been able to have seen these nestlings launched upon the world. However, it was of value to know that their departure differed from that of most birds in that they returned to the nest, so many nestlings never going back when once they have left it.

Los Angeles, California.

THE CALIFORNIA DISTRIBUTION OF THE ROADRUNNER (*GEOCOCCYX CALIFORNIANUS*)

BY JOSEPH GRINNELL

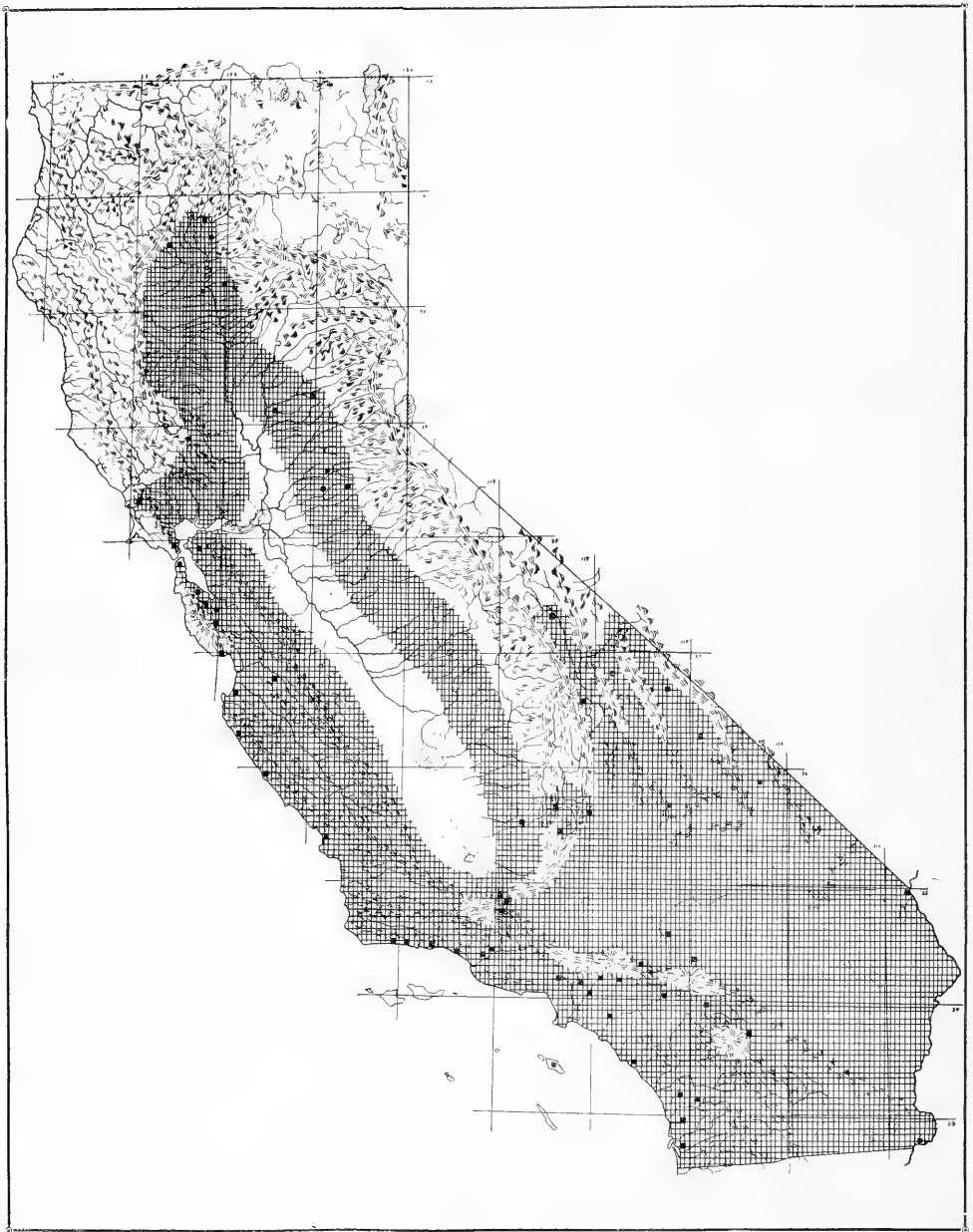
THE extremely limited powers of flight of the roadrunner are partly compensated for by its pedestrian capabilities. So that the range of territory possible to the individual roadrunner is doubtless much greater than one might at first suspect.

Yet I consider this species to be about as permanently "resident" as any bird we have. There may be a slight downward displacement on steep mountain sides in winter. But even if this is homologous to migration the movement must be so limited that we can safely ignore it in a distributional study. We can therefore establish its breeding range as practically coincident with its record area, irrespective of the season of observation.

On the accompanying map, I have plotted all the definite stations of occurrence on record in available ornithological literature. Many of the records pertain to counties or other extended areas. For example: "thruout the region;" "all along the Colorado River;" "all along the coast from Morro to Carpinteria," etc. In such cases I have not set down any single station; but the region indicated is of course included in the shaded area on the map. Altho this shaded area may cover some small tracts where the roadrunner does not occur, such as timberlands, swamps and alkali flats, I believe it fairly indicative of the roadrunner's California range.

The species is shy, and may not be seen for days in a region where it is known to be common. There is a sure means of detecting its presence, however, wanting among other birds; and this is the characteristic foot-prints in any soft ground, the dustier the plainer. I have seen these unmistakable tracks (two toes forwards and two backwards) during wagon trips over many parts of southern California. They are all that is necessary to establish the presence of the roadrunner.

The species is most abundant in the San Diegan District (faunal area). It is none the less characteristic thruout the desert regions of southeastern California, tho not so numerous. Its numbers become still less towards the northern limits of its range. It extends sparingly a little ways into the humid coast belt of central California. Mailliard records it as very sparingly resident in Marin County (CONDOR II, May 1900, p. 63); and there is one record even beyond that, at Sebastopol in Sonoma County (Belding, Land Bds. Pac. Dist., 1890, p. 56). This is the northernmost in the coast belt. But in the interior the roadrunner occurs along the foothills at each side of the Sacramento Valley nearly to latitude 41 degrees, this being the



DISTRIBUTION IN CALIFORNIA OF THE ROADRUNNER (*Geococcyx californianus*); BLACK SPOTS INDICATE ACTUAL RECORD-STATIONS

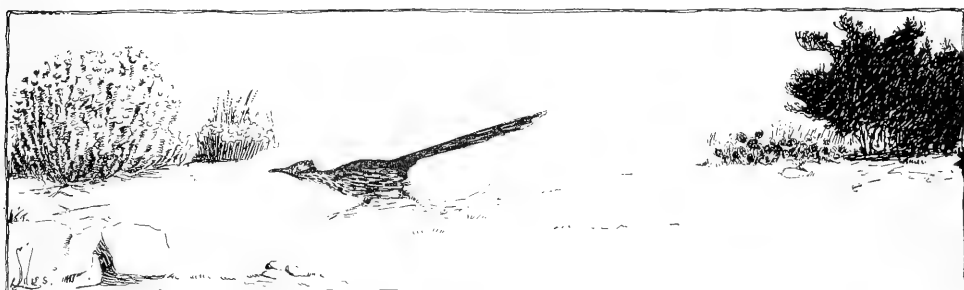
northernmost occurrence of the species anywhere in the United States. The three actual northernmost stations, all in Shasta County, are: Igo (Belding, Land Bds. Pac. Dist., 1890, p. 56), Fort Reading (Newberry, Pac. R. R. Rep. VI, 1857, p. 91), and Copper City, ten miles up Pitt River (Townsend, Proc. U. S. N. M. X, 1887, p. 204).

It seems that the low-lying, and often swampy central portions of the San Joaquin and Sacramento Valleys are not inhabited by the roadrunner; at least I cannot find any records for that region. East of the Sierras the species occurs north in the Owens Valley to Big Pine (Van Denburgh, Proc. Ac. Nat. Sc. Phila., April 1898, p. 209).

I am quite sure that the roadrunner does not now occur on any of the islands off the California Coast. Cooper recorded it from Santa Catalina Island (Proc. Cal. Ac. Sc. IV, Feb. 1870, p. 77); but neither myself nor any of the other late visitors that I know of have found it there.

The roadrunner in its distribution seems to follow very closely the limits of the Upper and Lower Sonoran Zones (see map of "Isothermic Areas" in Pac. Coast Avif. No. 3), especially in their arid and semiarid portions. I have found it in the San Bernardino Mountains up to above 6000 feet altitude, but this was on hot slopes where the Upper Sonoran Zone, as indicated by the flora, rises even higher.

Pasadena, California.



STRAY NOTES FROM THE FLATHEAD WOODS

BY P. M. SILLOWAY

JUNE 5, 1906.—Today for the first time I heard the singing of the white-crowned sparrow (*Zonotrichia leucophrys*). The songster was sitting in a tall dead pine tree, about midway up on a bare branch, and the song rang out beautifully clear and bell-like, as no other sparrow-song heard in this region. For a moment I felt all the thrill of a new sensation, the charm of a new voice in the woodland chorus. Again and again it rang out, a repeated ripple of plaintive wildwood melody. Finally I annotated it like this: *Wrr, dee-dle dee, dee dee*. The first syllable of the song is long drawn out, and the "dee-dle dee" following is remarkably sweet and liquid, vibrant and tinkling with mellowest silvery tone. The closing syllables are more hurried and are obscured.

JUNE 9.—The red-breasted nuthatch (*Sitta canadensis*) at times acts like a real flycatcher. Just now one alighted on a tree-trunk near me, and while investigating the bark crevices, twice he flew out from the trunk, captured a flying insect dexterously in the air, and returned to his gleaning on the bole.

Today I saw a chipmunk despoiling the home of an olive-backed thrush. The marauder was sitting on the brim of the nest, and was hastily munching a fresh egg, with a portion of the broken shell lying on the rim of the nest in front of him: A clear case against Mr. Chipmunk.

On this day also, June 9, another white-crowned sparrow was heard singing in a different locality from that where the first was heard, and to determine his real identity this songster was collected. The author of the song was the true white-crowned sparrow, with loreal area as black as possible, and it is fair to assume that this species is making its summer home on the shores of Flathead Lake.

JUNE 11.—A nest of the orange-crowned warbler (*Helminthophila celata*) was found in a little mountain park, in a small ravine directly at the foot of a perpendicular rock-face. The nest was at the foot of a thornbush sprout, sunken in a depression among dried grasses and kinnikinnick or moss, so that it was securely hidden unless discovered by mere chance. The chance was mine, however, and as I brushed against the sprout, out fluttered the sitting female, revealing the nest. She flitted away into the low bushes nearby and there lurked around, uttered an occasional sharp chirp, and finally disappeared without giving me an opportunity of seeing her so as to secure her. I waited near the place until noon, when habit overcame my scientific zeal and I descended the hillside to camp for dinner. In the afternoon I returned to the place, and again the sitting bird flitted away so hurriedly that I could not shoot her. Again I waited and watched as she lurked hidden in the underbrush; but she seemed to know how to keep out of sight; and it was nearly sunset before I secured her for identification.

The nest was made of dried grass stems and weed-bark strippings, and was lined with white horsehair and reddish brown moss stems. The cavity was about 2.60 inches across and 1.40 inches deep. When the nest was removed it was found to be quite loosely constructed, and it fell apart somewhat, losing much of its well rounded and firmly brimmed appearance *in situ*. There were five eggs, perfectly fresh, quite typical of the usually described eggs of this warbler. The male bird was not seen nor heard near the place during the entire day, and no males were singing nearer than a half-mile from the place.

JUNE 12.—A troop of Cassin purple finches (*Carpodacus cassinii*) was active on a hillside in a small mountain park. There were both males and females, the former in song. The birds were working mostly on the ground and among the bushes. There were so many individuals in the flock, and the occurrence seemed so unusual, that I took it to be a part of a migration movement. As I wandered over the mountain slope the birds kept flying up at my feet in a way that led me to fancy that the brush was full of nesting birds.

JUNE 15.—A nest of Richardson grouse (*Dendragapus obscurus richardsoni*) was found on a bushy hillside, a rocky slope that had been burned over in former years. The site was quite near a road that was not in very general use. The nest was in thick dried grass, near a clump of bushes, and was made entirely of the surrounding material. It was unusually open and exposed. The nest was evidently deserted, for the eggs were cold and beginning to fade from continued exposure to the sunshine. There were seven eggs, in which incubation had just begun.

Lewistown, Montana.

THE NEW CHECK-LIST

BY P. A. TAVERNER

WE ARE all more or less interested in the forthcoming check-list, now under preparation; and most of us have ideas as to what we should like to see therein. That everybody should be satisfied with the results, whatever they may be, is beyond hope. No matter what action is taken there are sure to be some disappointed ones.

Some of the reforms that I, personally, should like to see come to pass, seem beyond the grounds of possibility. Such is, for instance, the suppression of the Law of Priority as interpreted in Canons XII-XIV of the Code. The only apparent way to make our nomenclature stable is for the Committee to take high-handed measures and say that so-and-so shall be the names of the species, for all time to come, as long as the present system flourishes, grammar, philology, or priority to the contrary notwithstanding.

This would, I am aware, raise a storm of protest. But the international confusions arising therefrom certainly would be no greater than they now are, and perhaps would be less, as confusions once learned would stay learned and be subject to but half the change that they are now. The case of *Stercorarius parasiticus* is a fine example of international discord, where the same name applies to two different species according to two current systems of nomenclature. It matters very little what a species is called, so long as the name is permanent and all know the form to which it applies. All our literature refers to *Corvus americanus*. What good it has done to change it to *brachyrhynchos* I fail to see. It has antiquated whole shelves of our literature and, in this special case, has given us a difficult for a simple and thoroly characteristic name. The solution, however, of this question may be, as yet, far in the future, and perhaps belongs to the millennium rather than to the present.

There are, however, other desirable things that seem more probable of realization. Some of them are mentioned in the last issue of THE CONDOR over the initials "J. G." on page 154.

The suggestion of applying qualifying terms to each and all of the varieties of a subspecifically divided species is most wholesome, and should be applied to the scientific as well as the vernacular nomenclatural system. Modern subspecific ideas should not recognize the superiority of one variety over another without good evolutionary reasons for so doing. Why call one form a species and the rest varieties just because one of them had, of necessity, to be discovered first? To do so, not only fails to represent the true facts of the case, but in many instances actually falsifies them. The trinomial system necessitates the consideration of the term "species" as a collective noun, of which the varieties or subspecies are the component parts.

The western robin is just as much the "American robin" as the eastern form and, as such, has just as much right to that name. We should, then, be able to speak of both forms as a whole, as the American robin, *Merula migratoria*. When we are certain of the subspecific identification (not always easy or possible) or wish to differentiate the two forms, we can then say eastern robin, *M. m. migratoria*, or western robin, *M. m. propinqua*, as the case may be. Without doubt, this fact of the equality of all the varieties of a species, should be shown graphically in the arrangement of the coming list. Heretofore every slight variation that has been

deemed worthy of separation, has been given exactly the same honors in the way of type, position, etc., as the most strongly marked species. This lack of graphical co-ordination, in the old lists, has, I am sure, thru subconscious action, had much to do with "exaltation of subspecies" by raising small differences to a prominence in our thoughts far beyond the position to which they are taxonomically entitled.

The fact that a bird is a horned lark, is of far more importance than that it resembles Hoyt's form of the species; yet the latter minor fact is often dwelt upon with greater vehemence than the former major one. I should suggest that the subspecies be printed in smaller type than the specific headings and be set back from the margin, in a manner that will indicate visually their real taxonomic value as varieties. Something like this would, I think, be acceptable:

761. *Merula migratoria* (Linn.) AMERICAN ROBIN.

Synonymy, range, etc.

a. *M. m. migratoria* (Linn.) EASTERN ROBIN.

Range, etc.

b. *M. m. propinqua* (Ridgw.) WESTERN ROBIN.

Range, etc.

The custom of giving a simple name to one species, and the same name with a qualifying prefix to the next has, in several cases, been responsible for much confusion. Had the term "water thrush" been a generic cognomen and applied to all the members of the genus, and had *M. noveboracensis* been differentiated as "northern water thrush," the distribution of the species, in this locality, would not be in the badly mixed state that it is now.

Another feature that we want to see revised in the new List is the geographical ranges. We have acquired a deal of new data on this point since the last List, and nothing is more needed, at present writing, than up-to-date geographical distributions.

In regard to the extensive changes proposed in the vernacular names in the editorial above referred to, it does not seem to be expedient to make any more changes than is necessary. Of course it is just as important that the vernacular nomenclatural tools should be good tools as the scientific ones, but fixity in both is equally desirable. Adding qualifiers to existing names can cause little confusion; but radical changes are apt to do so. Not being familiar with the western species, I can hardly pass judgment upon many of the proposals made; but except in such cases where the name is flagrantly misleading, such as calling a quail a partridge, or vice versa, I should think caution should be practiced. We want fixity in the vernacular as well as the scientific systems and minor inconsistencies should be borne with to this end.

Highland Park, Michigan.

A FORGOTTEN REFERENCE TO THE NATURAL HISTORY OF CALIFORNIA

BY WALTER K. FISHER

THROUGH the kindness of Dr. James Perrin Smith of Stanford University I have recently examined an almost forgotten work which contains some interesting notes on the natural history of California. The book is entitled: "Life, Adventures, and Travels in California."¹ Dr. Smith's copy is a second edition, the "Conquest of California," etc., evidently having been absent from the first edition. The contents are chiefly concerned with an account of the history and geography of California, the customs of the natives, and the incidents or adventures of the author's journey. He sailed in December, 1840, from the mouth of the Columbia River for Hawaii in order to reach Monterey, California.

The natural history portion comprises a comparatively small part of the book and is considered under the following heads: Animals, Birds, Fish, Plants, Minerals. I have listed all the birds mentioned, and the numbers in parentheses refer to the pages on which the latin names occur. Spelling follows that of the original.

"Worthy of mention among the first of the feathered family in California, is the Great Vulture, peculiar, probably, to this country. Let his name be given in full—a lofty and sonorous one, and well fitting its owner—*Sarcoramphas Californianus*. (388) * * * The great vulture is met with along the whole Pacific coast from Lower California to the most northern boundaries of Oregon, and the Russian possessions." *Cathartes aura*, Turkey Buzzard (389). *Cathartes atratus*, Black Vulture, "is quite common in almost every part of the country west of the Rocky Mountains." *Aquila Chrysaetos*, Golden Eagle. "Its plumes are used by the natives as ornaments, and are attached to their pipes or calumets, from which circumstance it is called Calumet eagle. This species is found on the coast and in most sections of the woody and mountainous parts of California. It feeds on hares, grouse and other game, and seldom if ever catches fish." *Aquila leucocephala*, Bald Eagle (390). *Aquila Haliaeetus*, Osprey (391). *Falco peregrinus*, Black Hawk or Peregrine Falcon. *Falco Islandicus*, Jer-Falcon. "He inhabits the northern coast, and is properly confined to the frozen regions, though individuals are by no means rare in upper California." *Falco sparverius*, Sparrow Hawk. *Falco columbarius*, Pigeon Hawk. *Accipiter plumbarius*, Gos-Hawk. "Of the owls there are several species. *Strix Virginiana*, Great Horned Owl. *Strix nyctaea* Great Snow Owl. *Strix cucularia*."

"*Lanius borealis* (392), several species of *Tyrannus* and *Tyrannula*, Flycatchers; *Merula migratoria*, The Robin; *Orpheus felivox*, The Catbird; *Orpheus rufus*, The Brown Thrush; several Sylviatæ; *Alauda*, The Lark, one or two species; *Emberiza nivalis*, The Snow Bunting; *Icterus phæniceus*, The Redwing." *Loxia leucoptera*, The Crossbill. *Corvus corax*, The Raven. *Corvus corone*, The Crow. *Corvus pica*, The Magpie. "*Garrulus cristatus*, the Common Blue Jay, and another smaller species, probably *G. Stelleri*, are quite common. *Colaptes Mexicanus* * * * is found in upper California, and all along the Pacific coast, and is, with the exception of an occasional individual of the golden-winged

¹ The exact title is: Pictorial edition !!! | Life, | Adventures, and Travels | in | California. | By T. J. Farnum. | To which are added the | Conquest of California, | Travels in Oregon, | and | History of the Gold Regions. | New York, | Published by Cornish, Lampert & Co. | 1852.

species, *Picus auratus*, the only woodpecker which the author observed, except a species at Monterey, which is probably not yet described." (393.) *Trochilus colubris*. *T. rufus* "which seems to inhabit almost the whole country from Nootka Sound to the Rio del Norte in Mexico." *Hirundo Americana*, Common Barn Swallow. *H. lunifrons*, Cliff Swallow. *H. riparia*, Bank Swallow. *Caprimulgus Virginianus*, Night Hawk. *Alcedo Alcyon*, Kingfisher. *Tetrao urophasianus*, Great Cock. *T. obscurus* (394). *T. rupestris*, Rock Grouse, "inhabits the mountainous regions of the North. *T. umbellus*, The Ruffed Grouse and *T. leucurus*, White-tailed Grouse are common in different places." The following are also mentioned; *Tringa*, Sand Piper; *Charadrius*, Plover; *Numenius*, Curlew; *Totanus*, Tatler; *Limosa*, Godwit; *Scolopax*, Snipe; *Larus*, Gull. *Cygnus buccinator*, The Swan. *C. Bewickii*? *Anser albifrons*, Laughing Goose. *A. Canadensis*, Common Wild Goose. *A. hyperboreus*, Snow Goose. *A. bernacula*, Brant. *Pelicanus onocrotalus*, White Pelican. *Diomedea exulans*. *Diomedea fuliginosa*.

As there are no new forms described and no facts of a very startling nature revealed, the account must therefore be chiefly of historical interest. Under most of the species more or less annotation is given, although I have quoted only here and there. In this connection it is well to remember that at that early date the extent of California was somewhat elastic, and in the mind of the author probably included the entire country west of the Rockies, north of Mexico, and south of Oregon. His travels were mostly in our California, however.

According to the author: "There are probably many yet undescribed birds and quadrupeds in this country." He adds: "The author's sketches in this department are necessarily rather those of a traveller than a naturalist, and he has been obliged to content himself with mentioning those species which casually came within his own notice. It is very probable that many inaccuracies may be detected both in his nomenclature and descriptions, but these may be excused by the circumstances under which his notes were taken, his lack of books of reference, and his imperfect acquaintance with the science of Zoology."

Stanford University, California.

FROM FIELD AND STUDY

Monterey Bay Notes.—While collecting, at various times during the last four years, for the California Academy of Sciences, at Monterey Bay, several interesting species of birds were observed, and Mr. L. M. Loomis, Director of the Museum, has requested me to record the occurrence of some of the rarer ones, which is done herewith.

Brachyramphus hypoleucus, Xantus Murrelet. From November 24, 1904, to February 4, 1905, these murrelets were seen nearly every time a trip was made to the seaward of Point Pinos. The last one was seen on February 25. The most seen on any one day was twenty seen January 2, 1905. They were evidently moving southward, tho leisurely, for the majority were seen on the water, frequently in pairs. A series of thirty was taken.

Simorhynchus psittaculus, Paroquet Auklet. January 14, 1905, one was taken; and January 17, 1905, two more were secured. These three were all that were seen. They were out several miles from shore.

Podiceps holboellii, Holboell Grebe. From November 11, 1904, to February 4, 1905, these birds were seen every time the day's trip was made toward Monterey. On January 10, ten were seen. Usually not more than four or five were observed. They were most often seen within a radius of a half mile of the Monterey wharf. About fifteen specimens were obtained.

Sterna antillarum, Least Tern. At Moss Landing near the mouth of the Salinas River a small colony of these terns were feeding young, some of which were barely able to fly August 25, 1903. Several were taken.

Xema sabini, Sabine Gull. During the latter part of September, 1903, Sabine gulls were common off Point Pinos going south. Some eighty specimens were taken.

Harelda glacialis, Old-squaw. December 23, 1904, one specimen taken, the only one seen.—ROLLO H. BECK, *Monterey, California.*

Nesting of the Sierra Creeper.—During the summers of 1905 and 1906 spent in the San Bernardino Mountains of southern California, I became acquainted with the nesting of the Sierra creeper (*Certhia americana zelotes*). The species proved to be more numerous than I have ever seen it elsewhere, in the upper part of the Santa Ana Canyon and on its tributaries and adjacent slopes. While observed from an altitude of 5600 feet in the Santa Ana Canyon to as high as 9500 feet, above Dry Lake, on the north base of San Gorgonio Peak, yet the creepers were most abundantly represented in the canyons from 6000 feet to 7500 feet. This belt of abundance was also the belt in the Transition Zone where the incense cedar (*Libocedrus decurrens*) is conspicuously represented. And it was in these cedars that the majority of the creepers' nests were found.

While the birds themselves were most often seen and heard high above, scaling the massive trunks of the huge firs, pines, and cedars, yet their nests ranged not higher than twenty feet above the ground. Myself and companions examined fully thirty nests, easily discovered after we once learned how to find them, and of these I should judge the average height to have been six feet. In other words the majority could be at least touched by the hand as we stood on the ground. One nest was only three feet above ground.

Altho the majority of the nests found were on cedar trunks, one was on a Jeffrey pine, and at least five were on silver firs. In the latter cases the trees were dead and rotting, for it was only on dead trees that the bark had become loosened and separated enough from the trunk to afford the narrow sheltered spaces sought by the creepers for nesting sites. But the huge living cedar trunks furnished the ideal situations. For the bark on these is longitudinally ridged and fibrous, and it frequently becomes split into inner and outer layers, the latter hanging in broad loose strips. The narrow spaces behind these necessitate a very compressed style of nest. A typical nest closely studied by me may be described as follows:

The material employed externally was cedar bark strips one-eighth to one-half inch in width. This material had been deposited behind the loosened bark until it packed tightly enough to afford support for the nest proper. The bark strips extended down fully a foot in the cavity, and some of them protruded thru the vertical slit which served the birds as an entrance. The main mass of the nest consisted of shredded weathered, inner bark strips of the willow, felted finest internally, where admixed with a few small down-feathers. This nest proper was six inches wide in the direction permitted by the space, and only one and three-fourths inches across the narrow way. The nest-cavity was one and one-third by two and one-fourth inches, so that the sitting parent probably always occupied one position diametrically.

No nests were found with eggs later than June 11, but young were found, yet unable to fly, until July 20. Two sets of eggs found on June 11 consisted of four and five eggs, respectively. Broods of young were of three to six individuals, one of the latter number being noted on June 26.

The ground-color of the eggs is pure white. The markings are elongated in shape lengthwise of the egg. The brightest markings are burnt sienna the tint varying from this towards vinaceous as the depth of the markings in the shell-substance increases. The darkest markings average one millimeter in diameter, while the vinaceous ones vary down to mere points. The markings are most crowded around the large ends of the egg-shells, and radiate from this pole in lesser numbers towards the opposite pole. The nine eggs are quite uniform in appearance, tho certain ones are to be distinguished as more sparsely, more boldly, or more minutely marked. The markings on one set are not so dark as on the other, approaching pale hazel at darkest and ranging to vinaceous-cinnamon.

In shape the eggs of the Sierra creeper vary from ovate to elliptical-ovate. The two sets measure, in hundredths of an inch: .61x.45, .63x.42, .61x.44, .60x.44 and .56x.43, .57x.44, .59x.44, .55x.43, .58x.43.—JOSEPH GRINNELL, *Pasadena, California*.

Do Birds Desert Young?—Mr. W. Otto Emerson tells of a newly mated pair of orioles (*Icterus bullocki*) that he saw one day about a grove of eucalyptus trees. The male was in fine plumage, and he shot it for his collection. The next day the female appeared with a new husband who was as bright and fine looking as the bird that was killed the day before. At first chance this male was also shot, partly it was said, because of his fine plumage, and partly to see if the female could find another mate as readily. Two days later she appeared with a third husband, who went the way of the two former ones. The female then disappeared for a few days, but returned again with a fourth suitor. These two began building and soon had a home in the eucalyptus grove. This may be a remarkable case of wooing and winning, but very likely the widow oriole was breaking up other families.

Whenever I have found nests that were deserted when they contained eggs or young, I have attributed it to accidental death of one or both of the parents. But this is not always so.

During the summer of 1905, I was making a study of a family of Bullock orioles that nested in a willow tree. On June 13, there were three half-grown young in the nest. Both male and female were feeding. Suddenly, I noticed a brighter colored male fly over and light in a nearby tree while the father of the nestlings darted at him and drove him off. The next morning I noticed the same male appear and there was another fight. In the afternoon I heard the intruder, singing at the upper end of the orchard. The mother had been feeding her young, but as the hours passed her visits were fewer and I noticed only the male was bringing food. The next day the female had deserted her young entirely, for only the male was about, and he had assumed entire charge of the household.

It happened that a rain storm came up that night, and as the young birds were not hovered

we found them dead the next morning. The male was about with food, but there were no young to be fed. He stayed about most of the day, but I did not see the mother again. From all appearances, she was a deliberate deserter. Can it be that some birds are as unbirdlike as some people are inhuman?—WILLIAM L. FINLEY, *Portland, Oregon*.

***Puffinus creatopus* in Alameda County, California.**—On July 7, 1906, I was driving along the main road, home from a trip to the Santa Clara Valley, when, about three miles from Irvington and sixteen miles from Haywards, at the side of the road I saw what at first glance appeared to be a gull. It was lying directly under the telegraph wires, a strange place, I thought, for a gull to be seen at this time of the summer and still more, so far from the bay shore, at least six miles off. I was about to pass on, when the idea struck me that I had better identify the species. On picking up the bird, my surprise was complete, as I recognized it to be an ocean straggler, a shearwater instead of a gull.

On arriving home and skinning the bird, I found it very poor, an adult male in moulting condition. The only way I could account for this shearwater (*Puffinus creatopus*) straying so far from its natural surroundings, is that we had been having, for a week preceding, unusually thick fogs that had extended from the ocean inland for sixty miles or more. No fogs for many years had been so heavy and lasting all thru the day. This shearwater must have lost its bearings in the fogs along the ocean coast, which about opposite would be in the neighborhood of Pigeon Point or Pescadero Beach, some fifty miles or more in a bee-line from where the bird lay. It must have passed over the Coast Range into the Bay region, wandered about until it came down lower to sight the land, and struck against the mass of telegraph wires and was killed by the contact. On skinning the bird, I found a line or dent across the front of the skull.

That oceanic birds often get lost in the fogs, if they have not the coast line to go by, is thought to be a fact from recent investigation by Mr. L. M. Loomis on Monterey Bay. (See Calif. Water Birds No. IV, page 308.)—W. OTTO EMERSON, *Haywards, California*.

Another Record of the Alaska Water-thrush in California.—On the 29th of September 1906, I secured a female specimen of *Seiurus noveboracensis notabilis* near National City, San Diego County, California. A pair of this species were feeding, with several song sparrows, along the slimy mud exposed by low water in a fresh-water pond about one mile from San Diego Bay. They were not at all shy and allowed me to approach within easy "auxilliary" range. This was at 7 A. M., and the stomach of the bird secured was filled with what looked like tiny seeds.—C. B. LINTON, *Long Beach, California*.

Two New Winter Records from Tacoma, Washington.—Our little back yard here in the city boasts of three small trees; namely, a cedar, a horse-chestnut and a mountain ash. Nevertheless, during the winter months my system of a daily food supply of crumbs, seeds, etc., is always productive of a large mixed flock of English sparrows, rusty song sparrows, and Shufeldt and Oregon juncos. These in turn often attract rarer visitors, such as western evening grosbeaks and Sitka kinglets.

During the past December I was much pleased to have my regular flock decoy in a new winter record in the shape of a number of Townsend warblers (*Dendroica townsendi*). This is the first time that I have positively identified these birds in winter, altho during past years I have several times felt personally sure of their presence between the months of December and March. The December records for 1906 occurred on the 4th, 13th, 15th, 21st and 29th, three being seen on the 15th.

The second new record is that of the Anthony vireo (*Vireo huttoni obscurus*). These birds have several times been reported to me in winter. Mr. W. Leon Dawson, of Seattle, tells me he heard it once in winter near his city. They are also reported as being heard in winter on Vancouver Island. From Oregon, Mr. A. W. Anthony, of Portland, writes me that they winter near there along the Columbia River. I, myself, have several times felt positive of having both seen and heard the species around Tacoma in winter, but a vireo amid snow and ice was contrary to my Massachusetts upbringing, so I have never made any official records of it. Indeed, in their small size, color, and actions they so closely resemble the Sitka kinglet (*Regulus calendula grinnelli*) that a field-glass identification made in our dense fire woods might not be accepted as conclusive unless a more positive record had been made. It afforded me considerable satisfaction, therefore, to personally collect two specimens, a male on November 17, 1906, and a female on January 26, of the present year; this, too, in spite of ten consecutive days when the thermometer registered from 10° to 28° above zero. In both cases the vireos were travelling with a large flock of perhaps a hundred western golden-crowned kinglets and chestnut-backed chickadees. The cold weather apparently had not bothered them in the least, as both were very fat and in excellent condition.—J. H. BOWLES, *Tacoma, Washington*.

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

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H. T. CLIFTON, Business Manager, Box 404, Pasadena
WILLIAM L. FINLEY } Associate Editors
JOSEPH MAILLIARD }

Pasadena, California: Published Mar. 31, 1907

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States, Canada, Mexico, and U. S. Colonies, payable in advance.

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other countries in the International Postal Union

Claims for missing or imperfect numbers should be made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the Editor

Advertising Rates on application.

EDITORIALS

We have been frequently criticized of late for three things; namely: (1) For not using the metric system exclusively thruout THE CONDOR. (2) For using amended spelling to the small extent recommended by Roosevelt and others. (3) For not using a capital for the initial letter of all vernacular bird names, even where occurring in the body of a sentence.

1. We have always been in the habit of printing articles just as they are submitted to us as far as unit of measurement employed is concerned. Our esteemed fellow-member, Henry B. Kaeding, now of Sinaloa, has been particularly persistent in keeping us informed of our inconsistencies in regard to this matter. He urges us to adopt the metric system uniformly and exclusively. His arguments are sane, and we are agreed with him on all but one point: We would not want to work a hardship on our readers, if a majority of these were used to the English system and would find the metric system confusing.

2. We are in receipt of the following terse reply to a subscription notice sent out in January of this year, and this from one of our oldest subscribers: "When you spell like others, I will renew my subscription, but I will never help any publication which uses the form of spelling you do; the only way to reform cranks is to let them alone." The latter is our own sentiment too! We are personally strongly in favor of simplified spelling, consistently and authoritatively used. Our readers are surely familiar with the arguments *pro* and *con*.

3. It is claimed that a capital initial gives the bird name a prominence in the text justifi-

able because of its importance, and because it makes the name easier to find in making up indexes and in searching out references. On the other hand the text looks to us typographically smoother, and easier to read. For instance, "The habitat of the Chestnut-backed Chickadee overlaps that of the mountain chickadee."

Now, we propose to put these matters to a vote of Cooper Club members. (1) Shall we use the metric system *exclusively* in THE CONDOR? (2) Shall we continue to use the authorized amended spelling? (3) Shall we continue to use small initials for vernacular bird-names occurring in the body of sentences?

Write on a postal card "Yes" or "No," following each numeral, however you wish to vote, and address it at once to *Editor The Condor, 576 N. Marengo Ave., Pasadena, Calif.* We will govern ourselves in these regards in the future according to the majority vote of those Cooper Club members who are sufficiently interested to respond before May 1st. THE CONDOR is a Club affair and should meet the wishes of the Club. Results will be announced in our May issue.

We were alarmed and dismayed a month or so ago by the appearance in local papers of a dispatch from Washington to the effect that the Bureau of Biological Survey was in danger of being denied its yearly appropriation.

President F. W. D'Evelyn promptly telegraphed to Senator Perkins the Cooper Club's views as to the great value of the Biological Survey; and he has recently received a cordial and favorable acknowledgement from the Senator. Doubtless scientific societies all over the country sent similar protests. For the loss of the Survey would be felt in almost every branch of science, tho in none more than in ornithology. At any rate we are now partially relieved by learning that the Survey's appropriation for the coming year was finally voted, tho with a twenty per cent reduction.

We cannot see why such a narrow policy should have received even a modicum of consideration even in the name of extreme economy. Let anyone who suspects extravagance read the 1906 Report of H. W. Henshaw, Acting Chief of the Biological Survey, and see just how the fifty-odd thousand dollars was expended.

And as to the practical value of the Bureau's work, it seems to us that no branch of the Department of Agriculture could be canceled with more loss to commercial interests than the Biological Survey.

Battleships, antiquated in five years, ten million dollars; a scientific and practical bureau, appropriation fifty thousand, and this threatened on the plea of *economy*! Is this national progress in civilization?

The collector who visits Arizona must now provide himself with a permit. The following in reply to a request for information on the subject explains itself:

"Recognized collectors for reputable colleges who wish one or two specimens of each kind of bird are charged a nominal fee—\$1.00. Collectors who are selling and shipping to every-

body are not wanted, and are charged \$25 per year." (Signed) W. L. Pinney, Fish and Game Commissioner of Arizona Territory.

We don't propose to make these editorial columns a table of contents of the issue, as is often the custom of magazines. Yet we cannot help calling particular attention to the last pelican photo with Finley's article, page 41 of this number. Aren't the purely artistic merits of this picture to say the least exceptional?

Mr. and Mrs. Frank Stephens and Mr. Joseph Dixon are leaving the first of April for a season's collecting in southeastern Alaska. Their work is in the interests of a private party, and will pertain mostly to mammals. Yet birds will not be altogether neglected.

An effort was recently made in Oregon by the fruit growers in the southern part of the State to amend the Model Bird Law to such an extent that the legislation for song birds was practically annulled. They introduced a bill in the House to the effect that farmers, gardeners and orchardists could shoot any bird providing that it was considered detrimental to crops. The bill passed the House and also the Senate on February 21 by a narrow margin. But thru the Oregon Audubon Society, such a sentiment was raised in favor of the birds that Governor Chamberlain vetoed the bill on February 25.

The Portland, Oregon, Public Library has been presented by Mrs. W. S. Ladd with an original set of the four-volume elephant folio edition of Audubon. It is thought this is now the only complete set on the Pacific Coast. The set was purchased somewhere in the East in 1879 by Mr. William Ladd for \$1800. Mr. W. L. Finley has examined the work and finds these volumes of the "Birds of America" to belong to the same edition as those in the Library of the Academy of Natural Sciences of Philadelphia, as described by Stone in *The Auk* for July, 1906.

Mr. C. B. Linton, of the Southern Division has been visiting in turn this spring the various islands along the southern California coast. He reports many new records for San Clemente and San Nicolas.

We are informed that it is now the intention of the California Academy of Sciences to locate their new building, to cost about \$250,000, in Golden Gate Park. This will be a vast improvement over their former location in the dark and grimy business section of San Francisco.

Mr. Bradford Torrey of Boston is again spending the spring in southern California watching ouzels, solitaires and condors thru his 12-power Busch binocular.

The Cooper Club, both Divisions, has voted an increase in the subscription price of THE CONDOR. This was a warranted move for several reasons. The dollar rate did not meet the cost of publication. Even at the increased

rate, \$1.50 per year, ours is yet the lowest priced of ornithological magazines. We believe that our subscribers appreciate the value received in THE CONDOR, and will continue their support, the result of which will be an extension in its size and number of illustrations. Whether or not our expectations are well founded remains to be proven. It must be remembered, however, that THE CONDOR receives considerable of its support from the dues of the Cooper Club (which includes subscription), and these remain unchanged.

COMMUNICATIONS

SLAUGHTER OF BLUE JAYS

Editor THE CONDOR:

A double-column display header in a Sacramento paper lately published announced, "Killing of Jays, the Destroyers of Quail Nests." This charge conjoined with the detailed reading matter, which was written with an intensity which curdled one's blood, foretold that "there will be an *awful slaughter of blue jays during the early spring months.*" Subjoined was a subscription list wherein was donated various sums from \$1.50 to \$10, concluding with a very noble determination on the part of the individual who distinguished himself last year by killing the greatest number of jays "to strain every muscle and exercise every effort to uphold his reputation and win first prize this year."

Mr. Editor, rightly or wrongly the reading of this sent a creepy reflex thru my sympathetic, and I wondered if this slaughter was either intelligent or justifiable.

I remember as a boy in my native land the bad name the common magpie (*Pica caudata*) had as a destroyer of chickens, and a robber of nests. Indeed I even recollect seeing "sucked eggs," but never did I know of a pre-arranged slaughter, and yet the farmers of that region were careful of their own interests. But to return to the "Jays", I wrote up to the district where the campaign was being organized. I received some information which convinced me that in some cases at least, the execution was wrought by want of thought as well as want of heart. One of the subscribers honestly admits that "he had never given the matter of blue jays any personal attention, but was guided solely by the report of others." The heavy donation was from a dealer in sporting goods—a sportsman, and of course a close observer of nature! A third gentleman, who has the local reputation of being the best authority on birds said "that the jay is no good, he destroys eggs all the time," and that he "had actually seen a jay robbing a dove's nest, and flying away with the egg in his beak." The sportsman with the ambition for perennial premiership "is a farmer, an old gentleman" who had one thousand scalps to his credit for last season. One could, Mr. Editor, be a Christian and yet wish that the right hand of the "old gentleman" might at least soon lose its cunning, and not

over strain its senility to win a "jay" reputation. My informant tells that the 'sport' last season produced 6,000 counted scalps; many more unrecorded. The sport is stimulated by prizes—sportsman's sundries, guns, etc., etc., paid for out of the subscribed pool.

I was told "the first prize is a \$50 gun and the farmer's boy" (who probably learns ornithology, by suggestion) is "after that gun," and "gives the jay no rest." Thus the story runs, and the moral which our friends advance is "that last season was the best for quail for a long time." I do not desire to sound one note of censure upon these determined men; but if the main object is to save quail eggs, one naturally asks what advantageth it the quail, whether he dies in embryo, or a few months later falls a "sacrifice" to his kindly protector, who had shielded him "in egg," and watched over him in infancy, so that he might "pot" him in early maturity!

I presume the species of jays which are killed are the ordinary Pacific Coast species, *Aphelocoma californica* and *Cyanocitta stelleri*, species which have been investigated by our esteemed member, Prof. F. E. L. Beal of the Biological Survey, and others, and the evidence obtained permits the conclusion, that while the blue jay is a marauder and guilty in degree, it is not so to the extent which those who know it only by "its bad name" accord the unfortunate bird.

Prof. Beal tells us that in the stomachs of 141 California jays 35 per cent of the contents for the year consisted of animal matter and 65 per cent vegetable; traces of egg shells were found on'y in twenty-one stomachs; in another series of 300 stomachs only three contained egg shells and two, only, bones of birds."

I think it would be well within the scope of the C. O. C. if each member, and there are members in almost all parts of the State, would take the trouble of investigating scientifically the habits and foods of the blue jays as they were found in that especial district, and forwarding the results of such observations, to the secretary of the club. It is the duty of such a club as the C. O. C. to be able to state exactly the economic value or otherwise of any prominent species of bird. It does seem a questionable proceeding to slaughter in a single season over 8,000 individuals of a species, if there is no more valid reason for so doing than that the sportsman may form a nursery-preserve of some other species, whose economic value as an agricultural asset may actually be of a much lower value.

I have every confidence that when it can be shown that the blue jay, or any other black-listed species, has qualities which entitle it to an intelligent consideration, and which in equity mitigate its evil reputation, it will be found that the good sense of the sportsman, not

forgetting the apt kindliness of the "farmer's boy" will find him a less ardent competitor for "the prize-gun" and still less ambitious to attain a doubtful heroism in the "awful slaughter" of a species "during the early spring months."

I submit this matter to the members of the C. O. C.—ask them to graciously aid in obtaining facts—and indeed in all cases of appeal to be an ever ready and competent court of equity in all matters pertaining to our local ornithology.

Respectfully yours,
FREDERICK W. D'EVELYN,
President, Cooper Ornithological Club.

APROPOS OF EGG-COLLECTING

Editor THE CONDOR:

Some of those who read your pages have been both interested and amused at the trend of the controversies in the matter of egg-collecting. There is a broad streak of humor in the matter-of-factness with which the opponents of egg-collecting take themselves so seriously that their position would, if universally admitted, utterly obliterate every other domain of bird study than their own from the curricula of that great University in which all thoughtful men are students. But biological investigation is not all of knowledge; even as the *esthètik* which weaves its own poesy about the devious pursuits of the ultra-collector is not all of life. Those who fume and fulminate against the egg-collector would seem utterly to over-look the educative element in collecting.

To illustrate: Correspondence in which, with aims largely personal, he has been engaged during the past two years, has brought the writer into contact with a large number of bird students. Many of these have been known, at least by name, to some of us for many years. As we remember them twenty years ago, they were just egg-collectors—nothing else. Today they are students of bird life. No more exact investigators than a few of them are to be found in all the ranks of the American Ornithologists' Union. If, then, the acquiring of scientific data be a *summum bonum*, surely the early and erratic and impulsive career of every one of these "bird-men" has been richly worth the while.

A generation ago there was many a boy who spent the bulk of his spare time in turning somersaults or in standing on his head. Thus he learned the ins and the outs of the wrong-side-ups and the right-side-downs of things. And today, with the putting away of childish things, these same amusing acrobats are building rail-roads, digging canals and tunne's—are strenuously "getting after" the sundry *octopi* that have so wondrously thriven of late in the troubled seas of American commerce.

If, then, the faddists who teach "nature-

studied-to-death" for reward, and the grafters who oppose legitimate collecting, from behind the fortresses of Fish-and-Game Commissions, for gain, will broaden their horizon and open up the chambers of their souls just a little, to let in a mite of that broad generous air in which the sense of humor and of poesy bring to myriad souls exhilaration, rest and peace, this weary old world may possibly become a more comfortable and healthful place to live in. For "the life is more than meat". The soul is peer of the mind. And Man is more than the Polyp or the Monad. If we may, let us have peace: if not, let us at least war on mutual terms, and on neutral ground.

(REV.) P. B. PEABODY.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

JANUARY.—The Club met at the home of Mr. Joseph Mailliard, 1815 Vallejo Street, San Francisco, California, on January 19, 1907. President Mailliard occupied the chair. The minutes of the previous meeting were read and approved.

Louis P. Bolander, 432 Fair Oaks Street, San Francisco, Cal., was proposed for membership by H. T. Clifton. The following were elected active members: Prof. O. P. Jenkins, Stanford University, Cal.; Miss Flora A. Randolph, 1706 Walnut Street, Berkeley, Cal.; John W. Martin, 339 N. 1st Street, San Jose, Cal. The resignations of Mrs. H. H. Bailey, and Mr. George S. Towne were formally accepted.

A communication from Mr. H. T. Clifton, treasurer of the Club, recommending that certain members be suspended for non-payment of dues, was read and discussed. It was the opinion of those present that members failing to pay dues after sufficient notification, should be dropped, as they are a constant expense to the organization. Therefore the secretary was instructed to notify these members once more. If no response is received action shall be taken against them at the next meeting.

The election of officers for 1907 was then proceeded to, with the following results: President, Dr. F. W. D'Evelyn; Senior V. P., Miss Bertha L. Chapman; Junior V. P., Rollo H. Beck; Treasurer, H. T. Clifton; Secretary, H. O. Jenkins.

Following this, Mr. Mailliard resigned his position to Dr. D'Evelyn and a vote of thanks was unanimously given Mr. Mailliard for his past services to the Club. Dr. D'Evelyn took the chair and appointed as editors of THE CONDOR for the ensuing year: Joseph Grinnell, Editor-in-Chief; Joseph Mailliard and Wm. L. Finley, Associate Editors.

H. O. JENKINS, *Secretary*.

SOUTHERN DIVISION

JANUARY.—The Regular monthly meeting of the Southern Division of the Cooper Ornithological Club was called to order by Vice-President Judson in the Faculty Room of Throop Polytechnic Institute, January 31, 1907, with members Morcom, Grinnell, Clifton, Dixon, Cosper, Alphonse and Antonin Jay, and Law present, and, as visitors, Howard Wright and Adriaan Van Rossem.

The minutes of the last meeting, December 29, 1906, were read and approved. Applications for active membership were presented as follows: A. O. Treganza, Salt Lake City, Utah, proposed by C. S. Sharp; Howard Wright, Pasadena, Cal., proposed by J. Grinnell. On motion by Mr. Clifton, seconded by Mr. Jay, and duly carried, the secretary was instructed to cast the unanimous ballot of those present electing Austin Paul Smith of La Jolla, Cal., to active membership. This formality was complied with by the secretary. On motion by Mr. Morcom, seconded by Mr. Grinnell, and duly carried, the secretary was instructed to cast for the Southern Division, the unanimous ballot of those present electing to active membership, subject to the approval of the Club-at-Large, John F. Ferry, Chicago, Ill. The proposal of Jesse C. A. Mecker was held over for lack of formal application.

A letter from Messrs. Grinnell and Clifton, Editor and Business Manager, respectively, of THE CONDOR, was read, setting out at length reasons why the subscription-price of THE CONDOR is at present too little. Among them the following were the most potent: 1. \$1.00 is below actual cost. 2. Comparatively, at \$1.50, THE CONDOR is still the cheapest bird magazine published.

On motion, duly made and carried, the subscription to THE CONDOR for non-members of the Club, was raised to \$1.50 a year, subject to the approval of the Club-at-Large.

The Club then proceeded to the election of officers for the ensuing year. On motion by Mr. Dixon, and duly seconded and carried, Mr. Judson was instructed to cast the unanimous ballot of those present, electing those nominated at the December meeting. This formality was complied with, and the officers for 1907 are: President, G. Frean Morcom; Vice-President, G. Willett; Secretary, J. Eugene Law; Treasurer, W. Lee Chambers.

A letter from Mr. P. A. Taverner, Highland Park, Mich., was read, enlarging on the CONDOR editorial some months since in regard to uniformity in common names for birds. Some exceptions were taken to our Editor's views, but in general Mr. Taverner accords heartily with this suggestion. Adjourned.

J. EUGENE LAW, *Secretary*.

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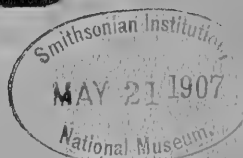
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Number 3



COOPER ORNITHOLOGICAL CLUB



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Entered as second-class matter May 4, 1906, at the post office at Pasadena, California;
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Volume IX

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ORNITHOLOGY FOR A STUDENT OF EVOLUTIONARY PROBLEMS ¹

By WM. E. RITTER

NOT long ago I made a hurried visit to the graveyard wherein lie the remains of learned societies that I have seen come to life and go to death during my acquaintance with affairs of the intellect in California. Never mind how many tomb-stones I found there nor what inscriptions they bore. Our interest is in the living rather than in the dead. Reference is made to these graves merely for the sake of asking wherefore in the midst of such wide-spread death and decay, any of the creations referred to should possess real powers of endurance.

I am speaking of associations whose ends are mutual helpfulness among persons having some common intellectual interest, but which have to accomplish these ends without legal status and money endowment. What ones of all such have escaped the common lot? Everybody acquainted with the Cooper Ornithological Club knows one of them. There is one other, and only one as noteworthy as this. That is the Philosophical Union, the focus of which is here in Berkeley. It would be interesting to know why these two organizations so asunder in character and purpose should have struck such deep root into the intellectual soil of our community. One meaning of the fact is that in this, as in any community where many minds are working vigorously and without trammel, physical nature in her most objective, most sensuous aspects is bound to have the homage due her at one end of the intellectual gamut, while the most recondite problems of existence will enforce their claims to attention at the other. This is as it should be. It means intellectual health and symmetry. The whole universe belongs to the human mind, and the mind's determination to make good its exalted claims is irresistible. Proof of the validity of these claims is furnished by the circumstance that into whatsoever part of the universe the mind penetrates, it is there able to establish law and order; or if another form of expression be preferred, it finds there law and order of a sort fitted to its own powers and modes of working.

¹ Read at Northern Division Cooper Club, March 9, 1907.

If my purpose in starting off with this sweep is not obvious I will make it so. However little or much I may say to you tonight or ever, I would leave no doubt in your minds that I stand for the essential unity of all truth, for the worth-whileness and dignity of all real knowledge, for the fundamental interdependence and mutual concern of all sincere endeavor in whatever domain of learning. "Fine, even grand as sentiment," is likely to be exclaimed by almost any man of science however close-shopped a specialist he may be. I would convince you, if perchance some among you are unconvinced, that not only is this good as sentiment, but that it is good and, in the long run, inevitable in practice as well.

From now on we will stick to our text—the worth of ornithology to problems of Evolution. That American Ornithology has reached a higher development than any other department of systematic natural history appears to be pretty generally admitted among biologists, at least of our own country. I suppose that in some groups of plants and animals, the classification is as refined in certain particulars as is that of birds. But for balanced accuracy in the taxonomy and out-of-door knowledge of a whole class, few would question ornithology's claim to first rank. What does this mean from the standpoint of evolutionary research?

Experimentation in the laboratory sense is held by many to be the king-pin of today's biology. Fullness and accuracy in data gathering, criticalness in the use of terms, and rigor in the testing of guesses and theories is a truer characterization of the scientific spirit of the time. It is not so much the "statistical method" as the mathematical habit that has spread over our science. Not statistics but mathematics in whatever way it can get hold is to be the watchword from now on. This imperial science is bound to reign in biology as it does everywhere else.

"Only in experience is truth," said the greatest of modern philosophers. It is hard for biology, especially evolutionary biology, to take this dictum seriously to heart. But it must. Comprehension of problems and attitudes of mind rather than tools are what we prize. Thru these we are finding experimentation to be one wholly indispensable tool; but the very discovery of the power of the experimental method in biology is discovery of the limitation of that method.

So too with the statistical method. At the very moment when this proves its indispensability, it proves also its limitations; it proves its impotency except as it works hand in hand with other methods. So it is and always has been and always must be with all particular methods. Comte and his followers made out a hierarchy of the sciences and assigned to each its distinctive method. *Comparison*, you know, was held to be the characteristic method in biology.

The story of Louis Agassiz's criticism of an address at a scientific meeting attended by him soon after his arrival in America, that it was "descriptive but not comparative," is familiar. The incident marks the beginning of an era in American science, as earlier the comparative method in the hands of Lamarck, Cuvier, Goethe, the Milne-Edwards and others, had made an era in European science. The achievements reached thru comparison as the guiding light, stand forth too magnificently in the history of the last century's progress in biology to permit cavil as to its efficacy as an instrument. But powerful as it is, who today would think of attributing to it all power? It, too, proved its limitations in proving its indispensability.

But while instruments sooner or later reveal their limitations and hence their necessity of being coupled with other instruments, they also prove their dependence on skill and accuracy in handling. *Many methods well used* is the day's demand. Against this no caveat worth heeding can be filed. Observations have to be made; descriptions have to be written; nomenclatures have to be applied; measurements and enumerations have to be taken; experiments have to be performed; and all must

be done widely and accurately. This sounds like platitude to any of us so long as we listen wholly from within the enclosure of our own specialties. Only when we look at some other fellow sweating away in his field, do we falter about admitting the demand without qualification. If I chance to be a cytologist or a chemical biologist I am prone to estimate lightly the worth of questions of priority in naming new species, or of descriptions of cretaceous diatoms. If I am absorbed in the folklore of Polynesian races, or the trees of North America, I am likely to be dubious about my colleague who spends his substance on counting chromosomes in a cockroaches' egg. But despite the diversity and narrowness of specialization, I am sure we are, especially in these last few years, coming to see more and more clearly, not only that all these things must be done and well done, but that by and by they work into one another's hands; that they more and more support one another, and lean upon one another, and that all together will finally make up a magnificent whole.

My specific inquiry this evening is: Where is Ornithology to stand in the good time coming? What is it going to contribute to the on-coming of the better day? How are its incomparable riches of observation and description to be worked into the larger biology? By whom is the working to be done? The last question may be first answered for it is easiest. It will have to be done largely by ornithologists themselves, and by those of exactly the stamp that has always been the fiber of the Cooper Club. I mean ornithologists whose love for and knowledge of birds are in their very bones by reason of having entered there with their mother's milk almost; by reason of their having lived from nursing days in uninterrupted companionship with the birds.

One of the foremost merits of ornithology is that its interest reaches so large a part of all there is to a bird. It studies the living bird as well as its dead remains. It regards the nest as well as the builder of it. The eggs and changing young are noted as well as the adult. The home, the food, the songs, the movements; the specific, even the personal, eccentricities are not neglected. Just because birds, living, singing, nesting, appeal above all other objects in nature, not even excepting flowers, to the unsophisticated heart as well as mind of us humans, has this splendid store of knowledge been laid in. Formal, professional science, of necessity somewhat austere, is always inclined to look askance at sentiment and imagination, and hence to that in nature which specially allures these. The finger of caution is constantly raised against beauty as such, in color and form and gracefulness of movement, and against illusive suggestion and comparison. But despite this generally wholesome restraint, so compelling in these ways are some aspects of nature that they will not be altogether let alone. If official science will not heed them, amateur science will. Thus ornithology, over and above the large place necessarily assigned to it in general zoology by the constituted judiciary of the science, has ever been pre-eminently the amateur's field. And from the days of the Hon. Danaï Barrington and Gilbert White, to say nothing of times antecedent to theirs, down to the present hour of the Cooper Club, knowledge of birds has come in large measure without professional sanction. And there is no doubt that much of this knowledge not only could not have been garnered by official science, but would not have been even if it could, since it would not have been regarded as quite worth the while. But now comes the highly significant thing. Official biology borne along by its own methods and results comes at length to see that it must have, with the rest, just the sort of data that amateur ornithology has been gleaning all these years.

The Darwinian tenet that "varieties are incipient species" made the trivial *kinds* of plants and animals glow with a significance they never before possessed,

and a concomitant impetus to their study resulted. In the absence of clearly defined conceptions of what either a variety or a species is, or of workable criteria for testing them, the multiplication of intergrading series ceased after a while, to be profitable to the student of evolution. For one occupied primarily with the making of a consistent, usable classification, such series are, of course, always important. But to him who seeks the meaning of these series, the mere exhibition of them does not yield much satisfaction; and the multiplication of instances after conviction is reached that the world is full of them, is not very enlightening. So it came about, not from the behests of science, but from that particular frailty of human nature which is impatient of efforts the value of which as measured by its own standards is not obvious, that "hair-splitting" in systematic botany and zoology fell into disrepute. Now, however, that the discoveries of Mendel and De Vries have put into our minds conceptions about *kinds* of organisms that we did not have before, and into our hands instruments for testing the character and validity of these, we see that it is exactly to the refined observations and descriptions of what exists in nature in the way of kinds, that those engaged on the problems of origin are compelled to turn for material to work with. Right, in science as in all else, may serenely await her day of vindication.

Species splitters, among whom American ornithologists have long sat on the front benches, have a right to be gratified that the very hands which a few brief years ago were pointed at them in disapprobation of their labors, are now stretched out to take from them the products of those same labors. You young bird men who a short while ago were likely to receive smiles of cynicism rather than of encouragement from biologists in high places for your enthusiasm in making out the subspecies of our song sparrows, our juncos, our kinglets, our horned larks and the rest, need no longer lament lest your work should have no reward but the pleasure in its performance. For a long time to come whatever of this sort you do will be rated higher on the scientific stock exchange than formerly it was.

But I am not going to let you off without an appendix to this reward of merit which I gladly give you. What further are ornithologists going to do in the premises? That they will keep on gathering information of the kind they have already garnered in such richness is to be hoped. Will they do more? Will they take a hand in searching after the significance of the facts, now that keener probing instruments have been devised? Two circumstances encourage the expectation that they will. In the first place the large amount of young blood there always is in ornithology, augurs well. Proverbially it is on the young men that new methods and new ideas have to rely mostly for getting themselves tried out.

In the second place it would seem that the insistence ornithology has long placed on precision should be a guarantee of its readiness to try other methods that are pre-eminently of this character. *Exactness* in observation, in description, in measurements, in terminology, has been its special glory. The critical habits engendered by these exactions should, it would seem, be rich and eager soil for still other exact methods to grow in. The ornithological positiveness as to what, on the morphological side, constitutes the species and subspecies, and the rigorous practices in testing these, leave little to be desired. This very positiveness and rigor, going thus far, ought to be intolerant of restraint on going farther. To the ornithologist who loves truth no less ardently than he does birds, the utter vagueness as to what his morphologically delimited groups would look like were they to be physiologically tested, cannot but forever fill the background of his scientific consciousness with foreboding. Cloddish and inadequate to the student of birds, above all naturalists, ought to be a classification that rests almost exclusively on

characterizations similar to those on which is based the classification of crystals and rocks. Form, color, proportions, texture, are these not, after all, the qualities upon which the ornithologist—in common with all other zoologists—relies for his classification to well nigh the same extent as does the crystallographer and the petrographer? And yet the bird is a *living* thing; exactly that about it which gives it its interest as compared with the crystal and the rock, quite ignored in its classification!

Can anything be more patent, when once you look the situation squarely in the face, than that our biological classifications *must* sooner or later be put on a broader foundation? Nothing that is *half* done is *well* done. Obviously our systems are not more than half done; for they practically ignore at least half of the nature of the objects classified.

Ill would it become me, a peculiarly unworthy member of the Cooper Club, to bolt into your midst with suggestions of new enterprises for the Club. I am not going to do this. Addressing you not as club members, but as a group of wide-awake ornithologists, I am merely going to point out wherein, as I see it, ornithology has a vantage ground quite its own in which to use such of the new instruments of research as have already proved their efficacy.

Would it not be practicable thru cooperation to test the nature of so-called ontogenic species among West-American birds? It seems to me that a few incubators, a few capacious but inexpensive out-of-door bird cages and a few competent ornithologists judiciously located in different parts of California would in a few years go a long way toward the final answer to this question. What considerable difficulty should there be in the way of taking the eggs of some of the bleached-out desert species like the Le Conte thrasher, the Abert towhee, the desert song sparrow, and the pallid wren-tit, to San Francisco, or Eureka, and rearing the broods to see what effect the new climate would have on the color?

Again who knows that the question of natural hybridization among birds might not be successfully attacked by breeding experiments? And what a capital problem this is, more than ever now that unit characters and Mendelian inheritance are among the realities of biology!

I can think of no set of facts an interpretation of which would be more illuminating than those presented by the supposed hybrids of the two flickers, the golden-shafted and the red-shafted. This problem appears to stand about where it was in 1892. Allen's studies on the distribution of the genus *Colaptes* and the color styles assumed by the "hybrids" between *auratus* and *cafer* were published in that year. Much as this good work advanced the subject, it left the most critical points as dark as ever. Do these two species actually mate together? If so are all of the offspring of the same pair marked in the same way? Are the hybrids fertile, and if so how are they marked? Do "hybrids" ever come from pure stock matings of either *auratus* or *cafer*? Perhaps these birds could not be induced to breed in captivity, but a whole string of such questions might be partly or wholly answered by studies in nature. An ornithologist well trained in general biology ought to be enabled to devote himself to this single question for an indefinite period. During the breeding season he should spend most of his time in the field; and when he could get away from the demands in this quarter, there would be plenty of laboratory and museum work on pigments, embryonic stages, moulting, anatomy etc. Furthermore the possibility of the birds breeding in captivity should be carefully tested. Pedigree culture, and crossing under control, would tell most could they be applied. No one but an ornithologist, however skilled in the methods of general biology, is equal to such a problem.

Another group of questions which ornithologists are in an especially favorable position to tackle is that of correlated characters and variations. Much could be done here without resort to breeding experiments. Observation coupled with anatomy and embryology could go a long way. Perhaps the most practical and interesting single question is that of whether or not the superficial characters ordinarily used for differentiating species are not associated, even if not actually correlated with other more deeply seated structural characters. I am not thinking about anatomical features that might serve as reliable tests of affinity, and hence as bases of more natural classifications. Of course I do not neglect the labors of such anatomists as Huxley, Fuerbringer, Shufeldt, Lucas and others in this field. Taxonomic trials with anatomical data have been carried far enough to justify, probably, the opinion of Newton and Gadow that "it is hopeless to attempt to arrive at a natural classification of Birds by a mechanical arrangement of even a great number of alleged leading characters."

What I have in mind is quite a different matter. It is this: Given two or more species of a genus well defined by characters generally used in ornithology, what other differentiating characters, if any, would a thoroughgoing examination of the whole animal discover?

I am quite sure that we must sooner or later, see that characterizing a species just far enough to place it in an artificial system of classification, is a very different matter from defining it thru and thru: that is, in such a way that nothing whatever truly distinctive about it shall have been left out. This is the sort of definition we shall demand when once we get red-hot after the problem of what a species really is. An individual bird consists of all there is of it from the time incubation begins until it dies. Isn't that so? If not, what segment of the life cycle does not belong to the individual? I am sure no bird man, thoroly imbued with what I take to be the distinctive spirit of ornithology, has the least desire to thus fragment a bird's life.

Well, if the real bird is the whole life of the bird, then for its whole life it is a member of its particular species; and if at *any* period of its life it has characters that are different from those possessed by any other species whatever, these must be specific characters and would surely be noted in a full description of the species. This, of course, means practically that the egg, not merely the *egg-shell*, the sperm, the embryo at all its stages, the fledgling, the adult bird in all its phases of moulting, with all its habits and songs, would have to be attended to in a thoroughgoing definition of the species.

Ornithologists have as a whole done better in this regard than other zoologists, and that is just the reason why they should do still more—vastly more—in the same direction. "To him that hath shall be given." The complement of the old truth is more to the point here: "Of him that hath accomplished shall more be expected."

One might easily designate other places wherein ornithology may be expected to shine in the new era of exacter, broader observation, and more critical testing of hypotheses and definitions into which biology is now fairly entered. The hard task, for instance, of establishing a more exact and trustworthy scale of values for characters, ornithology should contribute to largely. What department of biology except possibly entomology, is in better position to handle color from this point of view? It would be easy to designate other places in evolutionary theory at which ornithology might work with peculiar efficacy; but these are enough for a liberal program.

I close with a single reflection on the outlook of biological generalization of the day. At no time during the last twenty-five years have evolution hypotheses been so up in the air as just now. A few writers believe that the idea of evolution itself is going to smash. Sober, well-balanced naturalists are not skeptical to this extent. Many of them are, however, disposed to settle down to the view that search after a *method* by which species originate is time wasted simply because there is no such a thing. There are many factors, they say, in evolution, and biology has done all incumbent upon it when it has found out what they are. Certain it is now that there are various factors in species production, and it is a great achievement to have unearthed so many of them. Natural selection is a widely operative factor; so is sexual selection; so is orthogenesis; so is isolation; so, quite certainly, is mutation. The list, were it complete, of more or less distinct, more or less efficient, factors would be much longer. I ask are we to rest here? Having corralled these *factors*, are we going to write *finis* over the gate of the corral? Not if biological motive is true to itself. Does not your mind and mine, and every mind that is in the habit of thinking at all, start off immediately and unrestrainably, the last factor having been lodged in the corral, in quest of some one or at least a less number of factors or principles underlying those already captured? If species are fully produced by so many different causes, different combinations of these operating together in different groups of plants and animals, how do we know that species have anything in common? Is it a tenet of biology or any other physical or spiritual science that unlike causes produce like results? And if you are not certain that all species have something in common, what justification have you in attempting to treat them all alike in classification? What is the good of bothering about uniform rules of nomenclature if the rules are to apply to different things? But are we not warranted in believing, nay, are we not compelled by the totality of biological data to believe that there is more unity in evolution than all these factors indicate? Is there not fundamentality in the metabolic processes of organisms? Is not this true also of response to stimulus? Is it not true of reproduction? Has not the cellular theory of organization a unifying principle in it that is about the securest of all biological generalizations?

It is, I am confident, only stating what every thoughtful naturalist assents to without hesitation to say that the goal of biology—not a remote, but the immediate, animating goal—is greater unification of its knowledge. Minds can never rest from the search for deeper, more inclusive principles. This brings our evening's discussion to a close at the point from which it started.

University of California, Berkeley, California.

THE BIRD ISLANDS OF SOUTH AFRICA ¹

By W. L. SCLATER M. B. O. U.

ONE of the most remarkable forms of bird life at present existing is certainly the group of Penguins. These birds, which constitute the Order Im-pennes, stand wide apart from all the other living Orders of birds not only in their structure but also in their life history and distribution. They are the only birds in which the metatarsal bones of the adult show plainly their threefold origin, the bones in question being short and separated by deep grooves. The

¹ The spelling and capitalization in this article accord with the request of the author.

other character distinguishing the Penguins from all other birds is the degenerate condition of the wings, which are reduced to flattened inflexible paddles or flippers without any wing quills.

Penguins are confined to the southern and Antarctic seas. In the far south they form the most characteristic feature of those inhospitable regions. In addition to the shores of the Antarctic Continent and the various Islands of the South Seas they are found around the coasts of New Zealand, Australia, South Africa and South America. The most northerly point at which Penguins have been hitherto met with are the Galapagos Islands off the coast of Ecuador on the Equator in the Pacific.

On the coasts of South Africa only one species is met with. This is the Black-footed or Jackass Penguin (*Spheniscus demersus*) which makes up in numbers for the lack of variety. It is found everywhere along the coasts from the southern



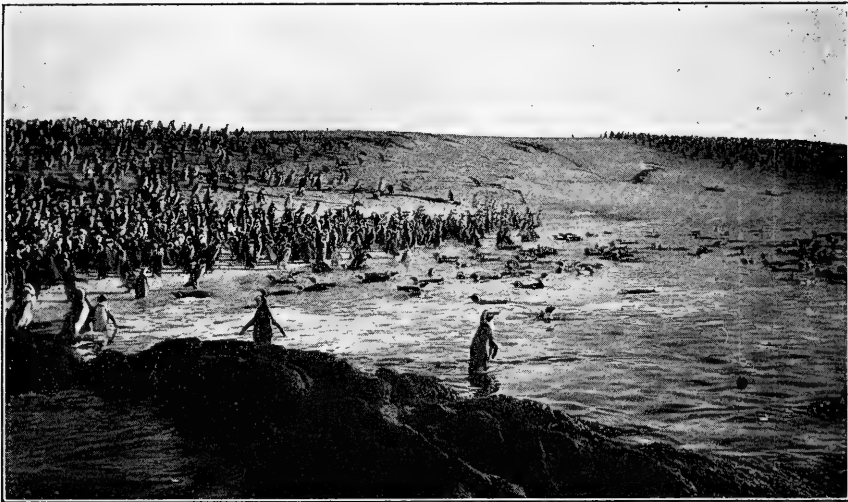
BLACK-FOOTED PENGUINS ON DASSEN ISLAND, SOUTH AFRICA

part of Angola on the west as far as Port Elizabeth on the south, and can be seen at any time swimming about in the sea quite unconcerned, even in the harbour at Cape Town. These Penguins never voluntarily come ashore on the mainland but resort to certain small islands all along the coast for breeding purposes. Here they are to be seen in enormous numbers at certain times of the year and it is the purpose of this article to describe a visit to one of these islands made in order to observe these and other sea birds.

The particular island which I last visited is called Dassen Island and lies about forty miles north of Cape Town and four or five miles from the nearest point of the mainland. It is low and sandy, about two miles long by about a mile across. My wife, to whom I am indebted for the photographs used to illustrate this article, and I, left Cape Town on February the third last year in a Government tug, in company

with Mr. Meade-Waldo and Mr. M. J. Nicoll, two ornithologists who were at the time making a cruise with the Earl of Crawford in his steam yacht *Valhalla* round Africa. We reached Dassen Island late in the afternoon. We stayed the night at the lighthouse keeper's cottage and spent the next day watching the birds. The Penguins covered the whole island and although it was very late in the season a great many were still breeding. As a rule shallow short burrows are dug out in the sand and the feet are used to throw out the debris. It was a curious sight to see a regular fountain of sand flying up in the air when this operation was proceeding. Where the ground is rocky a crevice or a sheltered spot under a rock is used for nesting purposes, but so numerous are the birds on Dassen Island that the whole ground is riddled with nesting holes and it is difficult to avoid falling into them when walking about. A few small pieces of rag or seaweed or other rubbish are sometimes made use of in the construction of the nest itself but it is never a very elaborate structure.

The eggs are usually two in number, though sometimes one, sometimes even three



BLACK-FOOTED PENGUINS ON THE SHORES OF DASSEN ISLAND, SOUTH AFRICA

are to be found; they are chalky in texture and in colour plain white with a faint tinge of bluish; but before being hatched are a good deal stained and soiled with dirt. The nestlings are comical looking youngsters covered with a uniform coat of brown down; this gradually peels off in shreds and the plumage of the young bird appears beneath. At this stage there is no trace of the white bands at the sides of the head or of the black horseshoe-shaped band across the chest; these are probably not acquired until after the first moult a year later. We observed a great number of young birds lying dead about the island; this is probably due to some accident having happened to the parents while away on a fishing excursion, as the young birds are entirely dependent on their parents for their food.

In the early morning numbers of birds were seen marching solemnly in long processions down towards the shore to take their morning bath and to go fishing; when hustled at all they fall flat on their bellies, wriggle along at a somewhat faster pace with the help of their flippers, till at last reaching the rocks along the shore they plunge into the sea with obvious satisfaction. As can be seen in the photo-

graphs they sit very low in the water when swimming and at the slightest alarm pop down below the surface very quietly and without any splash or jump, forming in this respect a marked contrast to the Duikers or Cormorants which are also very numerous on the island.

The food of the Penguin consists entirely of fish caught by diving and of these they must consume enormous quantities; when captured they are invariably very fat with a very thick layer of blubber underlying the skin and on this they can live many weeks without feeding.

The breeding season of the main body of the Penguins is in May and June (midwinter in South Africa), though eggs and young at all stages can be found the whole year round so that the time of our visit was not very favourable for seeing the island really covered with birds. Between May and August the eggs are collected and shipped to Cape Town for sale and the birds are not allowed to sit until the beginning of September. These islands and the other Bird islands round the coast of Cape Colony belong to the Government and are each placed under the charge of a headman. During the egg season a number of additional men, hired for the purpose by the headman, march across the island in different directions each



FLOCK OF PENGUINS ABOUT TO LAND ON THEIR NESTING ISLAND

one provided with a basket and a kitchen ladle tied onto the end of a long stick. This is used for scooping the eggs out of the burrows from underneath the birds. From Dassen Island an average number of about three hundred thousand (300,000) are gathered in this way each season and as this does not include incubated and broken eggs the number taken altogether cannot be much less than half a million. According to the Official Government returns the total number gathered from all the islands in 1902 was 469,400 valued at \$8405, while in 1901 the number was 630,000 valued at \$9,845.

The eggs are sold in Cape Town and other large centres and are eaten chiefly by the coloured population. Though a little fishy they are quite pleasant to the taste, the albumen being slightly bluish and transparent like that of a Plover's egg when boiled.

Of the other birds on the island by far the most numerous are the "Trek Duikers" (i. e., Wandering Divers), a species of Cormorant (*Phalacrocorax capensis*). This bird is one of the group of Cormorants with fourteen tail feathers and has a completely black plumage with a patch of yellow naked skin at the base

of the bill and a green iris. Like the Penguin the Cormorant is important commercially as from it is yearly derived large quantities of guano which together with the Penguin's eggs yields a considerable revenue to the Cape Government. The guano is scooped up from the rocks on which the Duikers sit and also from the nests and surrounding ground after the breeding season is over. The breeding season for the Duikers is from December to July, though as in the case of the Penguins a few can be found nesting at other times of the year. The nests are placed as a rule on the ground and built up of sticks and twigs of the low plants and grasses which grow on the islands. There is little or no lining. The eggs, usually four in number, are of the Cormorant type, oval and pale blue with a chalky white covering. They measure about 2.15x1.35 inches.

From this bird and from the Malagas (*Sula capensis*), which however does not usually resort to the same islands as the Duiker, from 4000 to 5000 tons of



BLACK-FOOTED PENGUINS ON NESTS IN A CLEFT OF THE ROCKS

guano are obtained every year by the Cape Government and sold to the farmers at about \$30.00 a ton, approximately the cost price.

I visited one of the breeding places of the Malagas in September, 1903. The Island itself is called Malagas Island, and is situated at the entrance to the harbour of Saldanha Bay, some seventy miles north of Cape Town. The island is quite a small one, only about half a mile across and is surrounded by low rocks and cliffs from ten to twenty feet in height so that landing was by no means easy.

I found the island, which was fairly flat, literally carpeted by the birds sitting so close to one another as to be in many cases actually touching each other. Here the nests consist of nothing but little mounds of mud and guano with a slight depression at the top, while everywhere between the nests the ground was bare and white with a deposit of excrement. Only one egg is laid, and on this the bird sits very closely, covering it with its large webbed feet so that it becomes very dirty long before incubation is completed.

The following is a list of the bird islands of Cape Colony, together with those of the coast of German Southwest Africa which also belong to the Government of Cape Colony; this is followed by the yield of guano and Penguins' eggs for 1902 the last year of which I have a complete record.

I. ISLANDS ON THE COAST OF CAPE COLONY

	Tons of guano collected in 1902.	Number of Penguin eggs gathered in 1902.	Chief guano- producing birds.
Bird Island in Algoa Bay	197	....	Malagas.
Dyer's Isle, nr. Danger Point in Caledon Division	253½	26,400	[Penguins. Trek-Duikers and
Seal Island in False Bay .....	....	....	....
Duiker Klip, nr. Hout Bay in Cape Division	3	....	Trek-Duikers.
Dassen Island, 60 miles north of Table Bay	240¼	325,000	[Penguins. Trek-Duikers and
Foundling's Island, south of Saldanha Bay	93	....	Trek-Duikers.
Jutten Island, Saldanha Bay	378¼	98,000	" "
Marcus Isle, Saldanha Bay	88¼	20,000	" "
Malagas Island, Saldanha Bay	688½	....	Malagas.
Paternoster Isle, north of Saldanha Bay Islands in Lambert's Bay, Clanwilliam Division	69¾	....	Trek-Duikers.
Elephant's Rock, off Olifant's River, Van Rhyn's Dorp Division	321¼	....	" "
	25	....	" "
Total	2357	469,400	

II. ISLANDS ON THE COAST OF GERMAN SOUTH-WEST AFRICA
FROM THE NORTH SOUTHWARDS

	Tons of guano collected in 1902.	Chief guano- producing birds.
Hollam's Bird Isle	50	Trek-Duikers.
Mercury Isle	120	" "
Ichaboe	1300	Trek-Duikers and Malagas.
Possession Island	600	" " " "
Sinclair's and Plum-pudding Islands.....	120	Trek-Duikers.
Halifax Island	160	" "
Pomona Island	80	" "
Penguin Seal Isle	15	" "
	2445	
Add Colonial Islands.....	2357	
Total no. of tons of guano collected) during 1902 for the Cape Gov't)	4802	

Colorado Springs, Colorado.

BIRDS COLLECTED BY W. W. BROWN, JR., ON CERROS, SAN BENITO
AND NATIVIDAD ISLANDS IN THE SPRING OF 1906, WITH
NOTES ON THE BIOTA OF THE ISLANDS

By JOHN E. THAYER and OUTRAM BANGS

THE following lists and notes, based on birds collected on Cerros, San Benito and Natividad Islands off the northern coast of Lower California by W. W. Brown, Jr., in the spring of 1906, may add a little to our knowledge of the ornithology of these barren, inaccessible islands. The field was in no sense a new one, such good bird collectors as Streets, Belding and Anthony having worked it; but it was desirable to get more specimens of some of the species found there, especially the three small land birds peculiar to the islands—*Thryomanes bewickii cerroensis* (Anthony) of Cerros, and *Carpodacus mcgregori* Anthony and *Passerculus tristatus sanctorum* (Ridg.) of San Benito.

Most of the literature bearing on the ornithology of these islands is rather fragmentary consisting of brief descriptions of new forms, or short notes on the breeding or other habits of some of the birds. Belding, however, published (Proc. U. S. Nat. Mus. Vol. 5, pp. 530 to 532, 1882) a list of twenty species of birds seen or taken by himself during a stay of twelve days in April, on Cerros Island. Anthony's descriptions of new forms and accounts of the breeding of petrels and other birds are scattered, but appeared chiefly in the *Auk*.

In the spring of 1906, W. W. Brown, Jr., visited these islands while on his way to Guadalupe and made small collections of birds, mammals and reptiles. He sailed from San Quentin, accompanied by Mr. H. W. Marsden as assistant, on the little schooner "La Fria" of ten tons burden on March 25, reaching Cerros Island in twenty-four hours. Here he planned to stay a week and a vessel was to call for him at the end of that time, but for some reason never explained a month elapsed before the "Santa Barbara," fourteen tons burden, came to take him off. This delay was serious as there were so few birds on Cerros that it was a waste of time staying there and it delayed his visit to Guadalupe till much later in the season than he had planned reaching there.

During this month Mr. Brown and Mr. Marsden made a short trip to Natividad Island; they, however, found no small land birds there.

On April 24, Brown and Marsden accompanied by Ignacio Oroso, a Mexican hunter, sailed from Cerros for Guadalupe, but made a stop of two days at the San Benito Islands.

In another paper we intend giving an account of Mr. Brown's experiences among the birds of Guadalupe and here only list such species as he took on the three smaller islands that he visited on his way thither. An account of each island, taken from Mr. Brown's notes, precedes the list of birds that he secured there.

CERROS ISLAND

"Cerros Island is nearly twenty-one miles long, north and south, and in width it varies from three miles near its northern end to nine miles near its southern end. The southern end of the island is twelve and one-half miles from the mainland of the Peninsula of Lower California. It is of volcanic origin, a mass of high, abrupt peaks, the highest being 3950 feet in altitude. The northern part of Cerros is comparatively fertile, the crests and northern slopes of the mountains being covered by

a growth of cedar and pine, some of which attain a height of 60 to 70 feet; the southern end of the island is however very barren.

"The domestic goat in a wild state occurs on the island and deer and rabbits are not uncommon. A *Neotoma* and a *Peromyscus* were the only small mammals we found. The shores of the island are resorted to by seals and sea-otters, tho we were unable to secure any, and the sea elephant was found there in the past." (Mr. Brown collected specimens of the following mammals, all species peculiar to Cerros Island: *Odocoileus cerrosensis* Merriam, *Sylvilagus cerrosensis* Allen, *Neotoma bryanti* Merriam, and *Peromyscus cerrosensis* Allen.)

"Birds on Cerros Island are not only extremely scarce, but are very shy. On the other islands we visited birds were tame and unsuspicious, and we were unable to account for their exceeding shyness on Cerros.

"We took specimens of three species of snakes and of five species of lizards and noted no others during our stay." (These have not yet been identified.)

Phalacrocorax dilophus albociliatus Ridg. One fully adult male in breeding plumage with the white plumes well developed, April 9.

Phalacrocorax penicillatus (Brandt). One adult female, April 20.

Pelecanus californicus Ridg. One female, April 9.

Pandion haliaetus carolinensis (Gmel.). Two adult males, March 30 and April 5.

Arenaria melanocephala (Vig.). Five adults of both sexes, three males and two females, March 26 to April 20.

Hæmatopus frazari Brewster. Three adults of both sexes, two males and one female, April 13 and April 18.

These skins vary considerably in the amount of black on the under parts, all but one showing some black spotting on the chest and under tail-coverts. One male, taken April 13, however, has the under parts much as in *H. palliatus*, with immaculate under tail-coverts, no black on the chest, and the black of the lower neck ending in an even line. It differs from *H. palliatus* mainly in its darker back and in being less purely white on sides of rump and upper tail-coverts.

Actitis macularia (Linn.). One adult female, April 4.

Heteractitis incanus (Gmel.). Ten specimens both sexes: five in the adult, spotted plumage, and five in immature gray plumage, April 2 to April 24.

Sterna maxima Bodd. Six specimens, adults and immature of both sexes, April 13 to April 20.

Larus heermanni Cassin. Two adult males, with pure white heads, April 20.

Larus occidentalis Aud. Five specimens, four adult females and one young male, April 1 to April 20.

Zenaidura carolinensis carolinensis (Linn.). Two adult males, April 15 and April 20. These do not differ in any way from rather pale individuals taken elsewhere at about the same season.

Trochilus costæ (Bourc.). Six specimens, both sexes; none of the males in quite full plumage; March 28 to April 8.

Trochilus anna (Less.). Two adult males, April 2 and April 3.

Selasphorus rufus (Gmel.). One female, March 30.

Sayornis saya (Bonap.). Two specimens, male and female. These birds are rather pale, apparently faded, but otherwise do not differ from continental specimens; they were taken on April 7 and April 17.

Otocoris alpestris enertera Oberholser. Eight adults, both sexes, March 26 to

April 18. This subspecies, lately described by Oberholser from Llano de Yrais, Lower California, appears to be a well-marked form.

Mimus polyglottos leucopterus (Vig.). Two specimens: A male and female, both adults, April 19.

Thryomanes bewickii cerroensis (Anthony). Thirteen specimens, including adults of both sexes, and two young, a male and a female; the adults taken March 27 to April 14, and the two young April 17.

The characters that separate this form, peculiar to Cerros Island, from *T. bewickii charienturus* of the coasts of southern California and northern Lower California, are well marked in this series, and the subspecies is a very good one.

Salpinctes obsoletus obsoletus (Say). Nine adults, both sexes, March 27 to April 4.

Corvus corax clarionensis Roth. & Hart. Four specimens, both sexes, April 4 to April 6. From the accompanying measurements of these four skins, it would seem that the raven of Cerros Island is rather nearer to *C. C. clarionensis* than to *C. corax sinuatus* of southern Mexico; all skins examined in this connection, however, from Sonora and the western United States are nearly if not quite intermediate and might almost as well be referred to one as the other race. The four skins afford the following measurements, in millimeters:

	Wing	Tail	Tarsus	Culmen	Depth of bill at nostril
A. ad. ♂	396	214	68.5	72.	25.5
B. youngish ♀	363	194	66.	65.	22.
C. ad. ♀	406	218	66.	70.	23.5
D. ad. ♀	395	216	68.	68.	23.

Lanius ludovicianus gambeli Ridg. Three females, two adult, one young, April 3 to April 21.

Icterus cucullatus nelsoni Ridg. Two specimens, a young male April 18, and a female (?) April 17.

Astragalinus psaltria hesperophilus Oberholser. Three specimens, two males and a female, April 1 to April 6.

Carpodacus mexicanus clementis (Mearns). Seven specimens, three adult males, three adult females, and one young female in nestling plumage, March 30 to April 12. This form had previously been found as far south as Todos Santos Island, Lower California; but it was a surprise to us to find that the Cerros Island bird was wholly referable to it and so very different from *C. mcgregori* of the nearby San Benito Islands.

There can be no question as to the identification of the skins. We not only worked over them very carefully ourselves, but sent them to Mr. Harry C. Oberholser who compared them with a large amount of material and pronounced them identical with specimens from the Santa Barbara Islands.

Passerculus rostratus sanctorum (Ridg.). One young male, in the moult, changing from the nestling to the autumnal plumage, April 21. This individual may have been a straggler from San Benito Island, where Mr. Brown found the bird very common.

Amphispiza bilineata deserticola Ridg. Six specimens: four adults, both sexes, and two young males in nestling plumage, March 26 to April 7. These skins are like more northern ones, except in being a trifle smaller in all measurements.

Spizella breweri Cassin. One adult male, March 30.

Zamelodia melanocephala (Swains.). One adult female, April 12.

NATIVIDAD ISLAND

"Natividad Island lies eight miles south of Cerros, and four miles from the mainland. It is three and three-quarter miles long, from northeast to southwest, and from half a mile to one and a half miles wide, widest at its southeastern end.

"It is a barren island, composed of rocky hills which in the middle part rise to a height of four hundred and forty-nine feet. The shores are steep and rocky bordered by detached rocks and kelp, except at the southeastern end where there is a sand beach about half a mile long.

"The vegetation of the island consists chiefly of the ice plant, which forms a carpet over the island, a tall species of cactus and a few small shrubs.

"There were seals along the shore, and these and one species of *Peromyscus*" (*Peromyscus maniculatus geronimensis* (Allen), kindly identified by Mr. W. H. Osgood) "which was very abundant appeared to constitute the mammalian fauna of Natividad. We saw several lizards.

"The beach was the resort of thousands of cormorants, and the island is noted for its guano deposits. The ground was honey-combed by the burrows of the shearwaters and Cassin auklets; most of these burrows were about five feet long, but one was ten feet. They were mostly deserted at the time of our visit, and we found but two with birds in them. We stayed but a day on Natividad and noted no small land birds."

Ptychoramphus aleuticus (Pall.). One adult, April 14.

Puffinus opisthomelas Coues. One adult male, April 14.

Phalacrocorax penicillatus (Brandt). One adult male, April 14.

Falco peregrinus anatum (Bp.). One adult male, April 14.

Arenaria melanocephala (Vig.). Three adult males, April 14.

Hæmatopus frazari Brewst. Three specimens, one male and two females (adults), April 14.

Numenius hudsonicus Lath. Two adult males, April 14.

Calidris arenaria (Linn.). Four females, April 14.

Larus heermanni Cassin. Two females, April 14. The males taken at this time of year on Cerros Island have pure white heads; in these two females the head is mottled grayish and brownish with a buff tinge; possibly they are not fully adult.

THE SAN BENITO ISLANDS

"The San Benito Islands are a group of three small, rocky, barren islands surrounded by outlying rocks and kelp. They lie at their nearest point fifteen miles west of the northern end of Cerros Island, and cover an area of nearly four miles in longitude by one and a half miles in latitude. They are about fifty miles from the mainland. West Benito, the largest, has bold, rocky shores and consists of an elevated plateau with a mound near the centre six hundred feet above the sea. Middle Benito is a low flat island, its highest part only eighty-two feet above the sea. It is separated from West Benito by a passage two hundred feet wide. East Benito is the second largest and is marked by four prominent hills, the highest four hundred and twenty-one feet in altitude. The vegetation consists of the tall cactus and a few shrubs. During our stay of two days we saw no mammals. Several lizards were seen, but none were secured. Only five species of small land birds were found, and only one of these was at all abundant—the large-billed sparrow. They were quite common, and we found young just out of the nest, tho no eggs. Cassin auklets were also very abundant and were breeding in burrows in the ground. We took one egg, the other nests all containing one young one each.

Besides the birds secured we shot two examples of *Hæmatopus frazari*, but they both fell in the heavy surf among the rocks and we were unable to secure them."

Ptychoramphus aleuticus (Pall.). Fourteen adults of both sexes, April 26.

Falco peregrinus anatum (Bonap.). One adult male, April 26.

Trochilus costæ (Bourc.). Two specimens, April 26.

Otocoris alpestris enertera Oberholser. Seven adults, both sexes, April 26.

Salpinctes obsoletus obsoletus (Say). Two adult females, April 26.

Carpodacus mcgregori Anthony. Five specimens, two males, apparently adult but with no red in the plumage, one adult female, and two nearly full-grown young males, April 25 and 26.

It had been thought that this very distinct species, peculiar to these small, barren islands, was nearly if not quite extinct. Unfortunately Mr. Brown did not note how many individuals he saw during the two days he spent at the San Benito Islands.

Passerculus rostratus sanctorum (Ridg.). Thirteen specimens, adults of both sexes, and young. In this series there are eight breeding birds in worn plumage, four nestlings—one apparently just out of the nest—and one, probably a young of the season, in fully acquired autumnal plumage, April 25 and 26.

Boston, Massachusetts.

THE WOODHOUSE JAY IN WESTERN COLORADO

By ROBERT B. ROCKWELL

THESE are few if any American birds which have received less recognition from Ornithological writers than the Woodhouse jay; hence a few observations regarding this bird may be of interest.

The writer's acquaintance with the Woodhouse jay was mostly acquired in the eastern part of Mesa County, Colorado, which is located on the western edge of the State adjoining Utah, and about the middle of the State north and south. The eastern part of the County is mountainous, ranging in altitude from 5,000 to 10,000 feet and for the most part is well watered and timbered. Thruout this section in localities ranging from 6,000 to 9,000 feet this jay is a common resident thruout the year.

During the winter months they are found in large numbers in the brush-clad gulches and ravines in the lower part of their range and usually not far from cultivated ground, where they feed largely upon grain and seed in the barn-yards, feedlots and fields. During this period they become very tame if not molested and will even occasionally slip into an open kitchen door in quest of some tempting morsel. Like the rest of the jays they are very inquisitive birds and a good deal of their time is spent "investigating." When feeding they are very quiet and seldom make any noise unless surprised or frightened.

They are at all times very cautious birds and altho they are fully as plentiful around the meat bait in coyote traps as the magpie I have never known of a jay being trapped, while large numbers of the magpies are caught in this manner.

As soon as the first feathery green appears on the scrub-oak covered hillsides Woodhouse forgets his domestic habits of the winter and thruout the summer is seldom seen in the vicinity of the ranch houses except when on some short foraging expedition.

Their favorite haunt is a gulch on an open hillside, which is heavily covered with scrub-oak, service-berry and pinyon, and here they are found in numbers, flitting thru the underbrush and keeping out of sight as much as possible, but continually uttering the coarse, grating cry characteristic of so many of this family.

When undisturbed they will occasionally mount a high fence post or the top-most branches of a small pinyon tree in plain sight of the surrounding ground, but when disturbed they quickly disappear and trust largely to the cover of the underbrush for protection.

As the breeding season approaches they are much quieter and very retiring in their habits, and when incubation begins only a careful search will satisfy the ob-



NEST AND EGGS OF THE WOODHOUSE JAY; FROM PHOTO TAKEN IN
MESA COUNTY, COLORADO, JUNE 16, 1903

server that there is a Woodhouse jay anywhere in the country, except for an occasional male bird who flies aimlessly about, in a manner thoroly exasperating to the observer who wonders where the nest is.

In the location and concealment of the nests they are evidently adepts, as in five years' observations I found but two nests, one of which was unoccupied; and even after the leaves have dropped in the fall they are rarely seen, a fact which can only be accounted for by the birds' rare art of concealment, for the nests are far too strongly built to weather away during the period between their occupancy and the falling leaves, and the birds are so abundant in all suitable localities that nests must be more or less common.

My first experience with the breeding birds occurred on June 16, 1903. I was carefully beating out a rather steep hillside sloping down from a high sandstone butte, at an altitude of about 6800 feet, looking for nests of the Wright flycatcher. The hillside was badly washed by the spring rains forming little gulches in the red adobe soil. The entire area was well covered with patches of service-berry, buck-brush, scrub-oak and an occasional pinyon.

As my pony brushed against a peculiarly thick clump of service-berry I heard a very slight flutter and not seeing a bird fly out, I dismounted and forced my way into the clump. As I did so the bird slipped quietly out on the other side and I caught a fleeting glimpse of her as she flew, barely a foot off the ground, into a nearby bush.

The nest, for such it proved to be, was built near the center of the clump and about four feet from the ground. It was held in place by a thick net-work of small angular twigs and two larger vertical branches none over $\frac{3}{8}$ inch in diameter. The only concealment afforded the nest was the thick mat of leaves at the extremity of the branches which formed a sort of canopy about the exterior of the bush, not a leaf being near enough to the nest to afford concealment; but right here is where I discovered the secret of their concealment. The outer structure of course so nearly resembles the network of small twigs in the service-berry bush that it was difficult to tell where the nest stopped and the twigs began.

The nest itself, which at first appeared to be a rather fragile structure, upon closer examination proved to be a remarkable piece of bird architecture. It was composed of a platform of very crooked dead twigs, thickly interlaced to form a basket-like structure, in which the nest proper was firmly placed. The latter, which was entirely separate from the outer basket was a beautifully woven and interlaced cup, composed of fine weed stalks on the outside, giving place to fine, brown, fibrous rootlets toward the interior which was sparingly lined with horsehair.

In general appearance the exterior was not unlike the nest of the white-rumped shrike, while the interior or nest proper closely resembled a black-headed grosbeak's nest. The entire structure, while not particularly artistic, exhibited a high grade of bird architecture and was remarkably strong and durable.

The nest outside measured about six inches in diameter by six inches in depth, and the interior structure measured outside $4\frac{1}{2}$ inches in diameter by $2\frac{3}{4}$ inches deep; inside $3\frac{3}{4}$ inches in diameter by $2\frac{1}{4}$ inches deep.

During the entire time I was examining and photographing the nest the male remained at the very top of a nearby service-berry bush, perfectly silent and apparently unconcerned. After flushing her from the nest I did not see the female again.

The nest contained three beautifully blotched eggs in which incubation was well advanced. They measure 1.12x.81, 1.12x.82, and 1.10x.80.

I am inclined to think that the date of nesting given by most authorities, is somewhat earlier in that altitude, as the service-berry and scrub-oak are not leafed out enough to furnish suitable concealment until late in May and I think about June 1 is an average date for fresh eggs in that locality.

The young of the year are not very much in evidence until they are well matured, but during August and September by which time the young are all able to take care of themselves the birds are particularly conspicuous and noisy.

It has been stated upon good authority that these birds are addicted to nest robbing, but I have never seen any indications of this and judging from the good feeling which apparently exists between these birds and other species I am in-

clined to think that their depredations are not as extensive as those of others of the jay family.

As soon as the young birds are able to travel there seems to be a sort of vertical migration, during which large numbers of the birds ascend a few thousand feet into the heavier timbered country, evidently in search of insect food, although I have not examined stomachs to verify this statement. This vertical movement does not affect the entire number of the species for, as I have stated, during August and September the birds are much in evidence thruout their range.

With the first frosts they congregate in small scattered flocks and perform whatever migration may be credited to them, which I am inclined to think amounts to very little, usually before the first big storm; but climatic conditions seem to have very little effect upon them, food supply alone being responsible for their migratory movements.

When the winter coat of white has entirely covered their food on the bleak hillsides, they return to their winter haunts nearer the inhabited sections where the waste from barn-yard and granary affords an abundant food supply until spring comes again.

Denver, Colorado.

THE BREEDING BIRDS OF ESCONDIDO

By C. S. SHARP

THE territory covered in the following list lies in the west-central part of San Diego County and about thirty to thirty-five miles north of San Diego. It comprises the valleys of Escondido and San Pasqual and part of the Bernardo Rancho. Escondido, by which name both the town and valley are now called, was originally an old Spanish grant, Rancho Rincon del Diablo, which comprised some 13,000 acres of hill and valley land. San Pasqual and Bernardo adjoin the grant on the east and south and both are crossed, San Pasqual for its whole length, by the Bernardo River, which takes its beginning in the mountains to the east in the Santa Ysabel and Pamo creeks. As the Bernardo River it flows in a general westerly course and finally reaches the coast as the San Dieguito River at the big laguna of that name lying north of Del Mar.

Where it leaves what we call Crescent Valley (below Bernardo and southwest of Escondido) and takes its way between the hills to the laguna and the sea, some twelve miles away, the elevation above sea level is 225 feet (U. S. Geological Survey). At the upper end of San Pasqual the elevation is 350 feet, distance about ten miles, Bernardo lying between. At Escondido the elevations run from 700 to 800 or 900 feet, with many hills scattered over the valley, and principally on its outskirts, running up a few hundred feet more; distance inland about fifteen miles.

The greater part of all this is under cultivation; only the higher hills retain their covering of brush, and live oaks that once were plentifully scattered over the valley are only found now on some of the higher northern exposures and in the ravines.

Much of the land is given up to farming and there are hundreds of acres of orchards and vineyards. San Pasqual and Bernardo are wholly dairy and farming countries with few orchards, many alfalfa fields, and several fine eucalyptus groves. All along the Bernardo river for nearly its entire course to Crescent Valley

there is a more or less thick growth of willows, in some places forming fine large groves with many large cottonwoods and a few sycamores. This is a bird paradise and much of my hunting and collecting has been done here. At Crescent Valley there are some fine oak groves and the hillsides are still pretty well covered with trees. There are many large cactus patches on the south slopes and the hillsides and small ravines are well filled with sage, grease-wood, sumac and wild lilac. Bernardo boasts of one tule pond, San Pasqual of two, and there are several water holes along the river, which may run well into July, or not at all, according to the season's rains. For two successive years one San Pasqual pond and the Bernardo pond were dry. In 1906 the San Pasqual pond had five feet of water in the tule patch and the river was running until August. The average rainfall here is about fourteen inches.

The following list comprises all the birds known to have nested in this section and is the result of observations covering some sixteen years. Most of the species given are regular breeders, some very common, others rare but regular, a few casual only. Almost all, however, nest here in such sufficient numbers as to be considered fairly common in consideration of the comparatively limited territory suitable to their requirements.

In some few instances there has been considerable difference in relative abundance, traceable without doubt to the character of the preceding winter; but in most cases the number of nesting birds remains apparently uniform. In the nesting seasons following several very dry winters previous to 1905 one of the commonest birds along the river in San Pasqual was the willow goldfinch, while the lazuli bunting was comparatively rare. In the season of 1905, after a winter of more than the average rainfall, the goldfinch was noticeably wanting and in 1906, after a very wet winter, it was hard to find them at all. In 1905 the lazuli bunting was everywhere, as common, almost, as the house finch, but was not at all common in 1906. In 1906, the lawrence goldfinch was more plentiful than I had ever seen it, and the Arkansas goldfinch was nesting in the orchards and willows in great abundance. Previous to 1905, the long-eared owl was a very common bird in the willow groves along the river; but since then they have been noticeably absent, and the nest complements, previously four or five, are largely of three eggs only. These birds were seldom disturbed and it is rather hard to account for their diminished numbers on any other ground than that the wet seasons caused the destruction of the various small mammals on which they so largely feed, causing them to migrate to better hunting grounds.

I am very well convinced that most of our resident birds produce and bring to maturity two broods in a season, some even more. With the Raptore one brood is a rule unless the first clutch of eggs is taken when a second is always laid.

The long-eared owl, however, and possibly the burrowing owl will often raise two broods. Of the other birds the California shrike, western mockingbird, mourning dove, house finch, black-chinned hummingbird, and probably the Anthony towhee and western lark sparrow will raise three broods under favorable conditions. The two former species I have known to do so in my own orchard, the types of eggs being the same in every case. In the following list the dates given are for the earliest and latest nesting dates, the eggs showing very slight or no traces of incubation unless otherwise stated.

I am greatly indebted to Messrs. N. K. and B. P. Carpenter for the use of their field and nesting notes which have aided me materially in compiling the list.

Colymbus nigricollis californicus. American Eared Grebe. A very rare breed-

ing bird. My only record is April 22, 1906, when a nest with seven partly incubated eggs was found in a tule pond in San Pasqual.

Podilymbus podiceps. Pied-billed Grebe. Rare breeder; only appears when the ponds are unusually full; fresh eggs noticed May 3 to June 24.

Anas boschas. Mallard. Only record is one nest found near Escondido in 1896.

Querquedula cyanoptera. Cinnamon Teal. A few pairs nest in San Pasqual near the ponds and water holes along the river; April 18 to May 13.

Erismatura jamaicensis. Ruddy Duck. Rare; I only know of two records of its breeding in San Pasqual in ten years. One of these was June 5, 1906, when six nearly hatched eggs were found in a this year's coot's nest; no down used in the lining.

Rallus virginianus. Virginia Rail. Very rare; found nesting in San Pasqual in 1900 and 1902.

Porzana carolina. Sora. Rare; found at Bernardo in 1902. For several years a pair have nested in nearly the same locality on the river below Escondido. Each year the nest was discovered before the clutch of eggs was complete and on going back a few days later the nest was always empty. My informant suspected a snake. It is more than likely tho that the bird removed the eggs herself.

Gallinula galeata. Florida Gallinule. Found nesting in San Pasqual, in 1900 and 1901. Not seen since.

Fulica americana. American Coot. Common resident. Every pond and water hole has its colony. Eggs far advanced in incubation were found April 20, 1903; and fresh on July 1, 1906.

Oxyechus vociferus. Kildeer. Common around ponds and damp places; May 8, 1896 (far advanced), to June 3, 1898.

Lophortyx californicus vallicola. Valley Quail. Common everywhere. Nesting most plentifully in vineyards and under hay cocks, often within a few feet of house and barn. April 12 to July 25 (advanced).

Zenaidura carolinensis. Mourning Dove. Common everywhere; March 15 to September 2.

Cathartes aura. Turkey Vulture. Resident from about middle of January to November; nests regularly but sparingly in the rock piles on higher hills in April.

Accipiter cooperi. Cooper Hawk. Not a common resident; nests in the groves along the rivers and in the wooded ravines. Most commonly seen around the chicken yards where it does considerable damage. April 2 to June 21.

Buteo borealis calurus. Western Red-tailed Hawk. Common resident. More plentiful in the higher interior valleys. February 26 (far advanced) to May 4.

Buteo lineatus elegans. Red-bellied Hawk. Common resident. Nests in groves along rivers. March 6, 1904 to July 4, 1906 (young a few days old).

Buteo swainsoni. Swainson Hawk. Not uncommon summer visitant nesting anywhere in the largest trees. Occasionally comes in great flocks in the spring migration. April 15 to June 1.

Aquila chrysaetos. Golden Eagle. Not uncommon resident, tho apparently known or seen by but few people here, owing to its tendency to keep to the hills and wilder country. Often seen over the valley, singly or a pair, sometimes three together. On March 27, 1904, I saw a bunch of five, four light-colored and the other very dark, and a few minutes afterwards saw another pair, both dark. April 1 to April 29.

Falco peregrinus anatum. Duck Hawk. Very rare; only one pair in the limits of section covered. Resident and have occupied the same cliff for twenty

years to my knowledge and were "old residents" before that. Only three pairs known in a radius of thirty miles. Nesting early in April.

Falco sparverius. American Sparrow Hawk. Common resident, nesting anywhere it can find a tree with a suitable cavity. March 25 to June 14.

Strix pratincola. American Barn Owl. Common resident. Nesting in any suitable place. Has been found in trees, crevices in ledges, pigeon boxes, inside a huge wood-rat's nest, at the entrance to a tunnel in an abandoned mining shaft, 65 feet below the surface, and in an old crow's nest. March 11 (advanced) to May 22 (advanced).

Asio wilsonianus. American Long-eared Owl. Common resident. Up to a few years ago almost every old crow's, hawk's or rat's nest along the river in San Pasqual had its pair of owls. Of late, for some unknown reason they have been less plentiful. As probably half of the eggs produced were successfully hatched (to make a very low estimate) and the birds are seldom molested, it is rather difficult to account for their apparently diminishing numbers. The earliest recorded set was taken by the late J. M. Hatch on February 14, 1896. Eggs have been found fresh on the 10th of May.

Megascops asio bendirei. California Screech Owl. Not a common resident. More often heard at night than seen in the daytime, and probably its apparent rarity can be accounted for by its nocturnal habits. March 24 to May 31 (advanced).

Bubo virginianus pacificus. Pacific Horned Owl. Not a common resident. More plentiful in the higher interior valleys. February 2 to March 16.

Speotyto cunicularia hypogæa. Burrowing Owl. Common everywhere. March 23 to June 16 (commenced).

Glaucidium gnoma. Pygmy Owl. A pair of these diminutive owls were found nesting at Escondido by the late J. M. Hatch in 1895 and 1896. The nests were in oaks not far apart both being in hollow, nearly horizontal limbs with openings allowing access to the nest from either side. The first nest had, I believe, very badly incubated eggs and was not disturbed. It was not located the following year until the eggs had hatched. The trees were shortly after cut down and the birds disappeared. There are no other instances of the species being seen here. Mr. Chas. Schnack who was with Mr. Hatch when the second nest was found tells me the owls had a curious trick of flattening themselves out on a branch so that it was almost impossible to tell them from the branch itself.

Geococcyx californianus. Road-runner. Common everywhere, especially around the cactus patches. Most every patch of any size has its nest. February 14 (advanced) to June 1 (commenced).

Dryobates pubescens turati. Willow Woodpecker. Rather rare among the willows along the river in San Pasqual. April 22 to May 24.

Dryobates nuttalli. Nuttall Woodpecker. Rather common among the willows in San Pasqual and in the low-lying oaks near the river. Rarely seen in Escondido. April 15 to June 18.

Melanerpes formicivorus bairdi. California Woodpecker. Rare in the valleys. Never seen in San Pasqual. Common however in the higher interior valleys. May 24 (young) to June 11.

Colaptes cafer collaris. Red-shafted Flicker. Not uncommon in San Pasqual and Escondido where there is suitable timber for it to operate upon. April 14 to June 15.

Phalænoptilus nuttalli californicus. Dusky Poor-will. Altho no authentic record of the breeding of this species here has been secured it is without doubt en-

titled to a place on this list. Its curious, rather profane sounding cry being constantly heard during what should be its nesting season.

Chordeiles acutipennis texensis. Texas Nighthawk. Rather an uncommon breeding bird. Seems to nest most commonly in the vineyards, placing the eggs on the bare ground under or near a vine.

Aeronautes melanoleucus. White-throated Swift. Quite a colony of swifts nests each year in a great cliff in San Pasqual which so far has defied all efforts at conquest. In 1898, Mr. E. Schnack found several nests of the swifts with eggs in a small cave at one end of the main ledge.

Trochilus alexandri. Black-chinned Hummingbird. Very common among the sycamores and eucalyptus groves and willows. Two and probably three broods are raised in a season. April 15 (advanced) to July 23.

Calypte costæ. Costa Hummingbird. Common among sage and greasewood on the low hillsides and near small ravines and in the eucalyptus groves. May 9 to July 2; probably two broods.

Calypte anna. Anna Hummingbird. Not so common as the two preceding species. Seems to have a preference for the orange and lemon groves. Probably two broods. March 19 (half grown young) to July 20.

Tyrannus verticalis. Arkansas Kingbird. Common resident. May 5 to July 3.

Tyrannus vociferans. Cassin Kingbird. A very uncommon breeding bird in this section. May 23 to June 27.

Myiarchus cinerascens. Ash-throated Flycatcher. Not uncommon in the willows along the rivers and among the oaks. May 7 to June 21.

Sayornis saya. Say Phoebe. One record only, in this vicinity, April 22, 1906, when Mr. B. P. Carpenter found a nest with fresh eggs over the main entrance to the Escondido High School building.

Sayornis nigricans. Black Phoebe. Common resident, nesting around buildings, bridges, rocks, etc., generally not far from water, often over it. April 16 (far advanced) to June 16. Two broods, probably three, are raised.

Contopus richardsoni. Western Wood Pewee. Rather a common nesting bird along the rivers and among the oaks. May 10 to June 30. Two broods raised.

Empidonax traillii. Traill Flycatcher. A nest found by me in San Pasqual on June 4, 1905, is the only record here for this species.

Otocoris alpestris actia. California Horned Lark. One of our most common residents. April 6 (advanced) to June 20.

Aphelocoma californica obscura. Belding Jay. Rather a common resident among the oaks and willows. March 10 to June 10.

Corvus brachyrhynchos hesperis. California Crow. Common resident in the groves along the rivers. March 27 to May 13.

Agelaius phoeniceus neutralis. San Diego Red-winged Blackbird. Common around the ponds and rivers. April 14 to May 20. One brood as a rule, unless first clutch of eggs is taken or destroyed.

Agelaius tricolor. Tri-colored Blackbird. Somewhat less common than the preceding; nesting the same. April 30 to May 26.

Sturnella magna neglecta. Western Meadowlark. Common resident. March 23 to June 15.

Icterus cucullatus nelsoni. Arizona Hooded Oriole. Common summer visitant, nesting mostly in the eucalyptus groves. April 20 to July 15 (advanced). Two broods are raised.

Icterus bullocki. Bullock Oriole. Common summer visitant. Most com-

monly found in the sycamores and cottonwoods along the rivers. May 3 to June 7.

Euphagus cyanocephalus. Brewer Blackbird. Very common resident, nesting in small colonies of perhaps a dozen pairs most anywhere. April 15 to June 10.

Carpodacus mexicanus frontalis. House Finch. Common resident, nesting anywhere. April 2 to July 20. Probably three broods are raised.

Astragalinus tristis salicamans. Willow Goldfinch. Common along the river in San Pasqual. Varying greatly in numbers according to season. After a wet spring with late rains, when the river is running well into the summer, they are almost wholly lacking in sections where a dry season finds them most plentiful. May 4 to July 21 (advanced). Two broods may possibly be raised.

Astragalinus psaltria hesperophilus. Green-backed Goldfinch. Very common, nesting in small colonies in the orchards and indeed most anywhere. Two, possibly three broods are raised. April 22 to July 21.

Astragalinus lawrencei. Lawrence Goldfinch. Not uncommon summer visitant, nesting in colonies of a few pairs in the orchards and other suitable places. One brood only, as a rule. April 12 to May 25.

Chondestes grammacus strigatus. Western Lark Sparrow. Very common resident, nesting most anywhere, on ground, in low bushes, trees or vines. March 27 to July 6. Two, possibly three, broods are raised.

Spizella socialis arizonæ. Western Chipping Sparrow. Rather uncommon in Escondido. Not seen in San Pasqual. Common in higher interior valleys, nesting in first part of May. May 5 to 11.

Spizella atrogularis. Black-chinned Sparrow. A nest with three eggs found near my house on June 12, 1905, and kindly presented to me by Mr. C. L. Pauter of Escondido has been indentified by Mr. E. J. Horgan of the U. S. Nat. Museum as being undoubtedly of this species. It is the only record of the appearance of the species here that I have heard of.

Amphispiza belli. Bell Sparrow. Very rare. Only two definite records from San Pasqual. Nests were found by myself in 1905 (June 18), and by N. K. Carpenter on May 27, 1906 (advanced).

Aimophila ruficeps. Rufous-crowned Sparrow. Very rare. Only positive record is that of a nest with two young and two almost pipped eggs found on March 11, 1900. Said to have been not uncommon in the earlier days when the hillsides had not been cleared of brush.

Melospiza cinerea cooperi. San Diego Song Sparrow. Common resident. Very plentiful in San Pasqual along the river. April 14 to July 18 (advanced); two broods, possibly three.

Pipilo maculatus megalonyx. Spurred Towhee. Not a very common resident. Rather rare in Escondido but found more commonly in San Pasqual. March 11 to May 10 (young).

Pipilo fuscus senicula. Anthony Towhee. One of our most common residents. Found everywhere. March 19 to July 12.

Zamelodia melanocephala. Black-headed Grosbeak. A very common summer visitant, nesting mostly in the willows along the rivers. April 28 to July 2.

Guiraca cærulea lazula. Western Blue Grosbeak. Rare. Has been found nesting in both Escondido and San Pasqual. May 5 to June 26.

Cyanospiza amœna. Lazuli Bunting. Common but somewhat irregular in its appearance. April 30 to June 2.

Progne subis hesperia. Western Martin. Very rare. Only one pair known to nest in Escondido. These for many seasons returned to the same cavity in a sycamore standing beside a barn on a fruit ranch here, but have been missing now for two seasons.

Petrochelidon lunifrons. Cliff Swallow. Very common visitant in summer, nesting around the buildings, occasionally on the large boulders on the hillsides. May 3 to July 21. Two broods sometimes raised.

Phainopepla nitens. Phainopepla. Not uncommon, but rather variable as to numbers. Seen in greatest abundance in 1902. Since then there seem to have been fewer of the species here. May 8 (far advanced) to July 4 (young).

Lanius ludovicianus gambeli. California Shrike. One of our common residents, nesting most anywhere in trees or brush-piles. Often three broods are raised in a season. March 5 to June 22.

Vireo gilvus swainsoni. Western Warbling Vireo. Not uncommon around upper end of Escondido Valley. Not seen in San Pasqual yet, tho it probably occurs there. One brood only, in early June.

Vireo pusillus. Least Vireo. Very common in the willow groves along the rivers. Two broods may possibly be raised. April 24 to June 18.

Dendroica aestiva. Yellow Warbler. Not uncommon in Escondido but rather rare in San Pasqual. May 18 (far advanced) to June 20.

Geothlypis trichas occidentalis. Western Yellow-throat. Not uncommon along the river in San Pasqual; rare in Escondido. May 18 to June 14.

Icteria virens longicauda. Long-tailed Chat. Quite common along the river in San Pasqual. Rarely seen at any time in Escondido. May 10 to June 4.

Wilsonia pusilla chryseola. Golden Pileolated Warbler. Only one nesting record in San Pasqual: June 16, 1901.

Mimus polyglottos leucopterus. Western Mockingbird. One of commonest residents. Two, often three, broods are raised. April 5 to June 4.

Toxostoma redivivum pasadenense. Pasadena Thrasher. One of our common residents. Two broods, possibly three, are raised. February 18 to June 13.

Heleodytes brunneicapillus couesi. Cactus Wren. Common resident; almost every good-sized cactus patch has its pair of wrens. More common in San Pasqual. April 16 to June 2; possibly two broods.

Catherpes mexicanus punctulatus. Dotted Canyon Wren. Not common; found only in a few of the more rocky ravines running up from the valleys. April 8 to April 17.

Thryomanes bewickii charienturus. California Bewick Wren. Not uncommon in the willow groves along the river in San Pasqual. Rather irregular in abundance. Quite common in 1900 and 1901, much less so since, and in some years hardly seen. April 14 to June 2.

Troglodytes aedon parkmani. Parkman Wren. Very common in the willows along the rivers; to a lesser extent among the oaks, even when near the river. April 16 to June 12. Possibly two broods.

Bæolophus inornatus. Plain Titmouse. I found this species nesting at Crescent Valley at 250 feet elevation on April 14, 1906. This is the only record. This bird is common among the oaks in the higher mountains but never comes into the valleys. Mrs. Bailey found it breeding in May, 1889, and in June, 1894, at Maj. Merriam's ranch at Twin Oaks (Auk XIII, page 115) which is at about the same elevation as Escondido (750 feet) and a few miles north. That might perhaps be explained by the fact that the ravines at Twin Oaks are much more thickly wooded and were especially so at that time, with a fine grove of large oaks on the Merriam ranch such as one cannot find now-a-days in Escondido. Both records are interesting as the species seems to be most at home at a higher altitude.

Chamæa fasciata henshawi. Pallid Wren-Tit. Common in and near the bushy ravines and on the higher hillsides. March 11 (young) to May 23.

Psaltiriparus minimus californicus. California Bush-tit. Common among the willows, oaks, and higher brush along the rivers and on hillsides. March 18, to June 14.

Poliophtila cærulea obscura. Western Gnatcatcher. Not uncommon in the brush near ravines and on low hillsides and among the willows. April 16 to June 24.

Poliophtila californica. Black-tailed Gnatcatcher. Only found once by me in San Pasqual, April 5, 1901. Several nests said to have been found at Escondido.

Sialia mexicana. Western Bluebird. Nest found at Crescent Valley with young in March, 1905. No other record. Breeds plentifully in the higher mountains and valleys.

Supplementary list of birds found breeding at Escondido Reservoir, elevation 1250 feet, and about two miles outside limits covered in foregoing list:

Vireo huttoni oberholseri. Oberholser Vireo.

Sitta carolinensis aculeata. Slender-billed Nuthatch. Both the above found by Mr. James Dixon. The latter species, possibly both, decidedly out of its range which should be the higher hills up to the level of the deciduous oaks.

Birds found breeding at Vista, Guajome and San Luis Rey, 10 to 15 miles northwesterly from Escondido:

Corvus corax sinuatus. American Raven. Found by Mr. B. P. Carpenter nesting at Vista in 1905.

Plegadis guarauna. White-faced Glossy Ibis. A colony of about a dozen birds was found nesting in the tules at Guajome in 1901. No other records.

Ardetta exilis. Least Bittern. Found nesting in the tules at San Luis Rey in 1901.

Telmatodytes palustris paludicola. Tule Wren. Common in the tules at San Luis Rey; never seen around the ponds in San Pasqual.

Escondido, California.

GULLS AS SCAVENGERS

By WALTER K. FISHER

THAT gulls are admirable scavengers is a fact well known, and it is considered of sufficient economic importance to insure their protection by all enlightened sea-coast towns. Some municipalities dump their garbage into the sea, and if gulls are at all common they do the rest, with the aid of numerous other water birds. Altho the neighborhood of a garbage chute may not be attractive to the average bird student, it is none the less a good place to watch and photograph gulls, provided these birds are plentiful in its vicinity.

Not far from the town of Monterey, California, there is such a chute, used chiefly by the Presidio of Monterey. On either side are convenient rocks upon which to stand, or place a tripod. The gulls swim in to the base of the chute and are very tame, or were three years ago. After feeding they sit about on the rocks, and one has little trouble in securing all the negatives he desires. The accompanying picture shows a number of immature gulls watching for morsels to be washed out by the waves. The immaturity of these birds may account for their lack of fear. I am not sufficiently practiced to be able to identify young gulls on the water, but the old birds which were common in the vicinity were chiefly *Larus argentatus* and *L. occidentalis*; so it is probable that the majority of the birds in

the picture belong to these species. At that particular time (December, 1903) sea-birds were unusually numerous in Monterey Bay, owing to the presence of schools of herrings.

Stanford University, California.



GULLS FEEDING ON GARBAGE NEAR MONTEREY; 184 BIRDS IN THE PICTURE

NOTES FROM THE PHILIPPINES

By JOSEPH CLEMENS

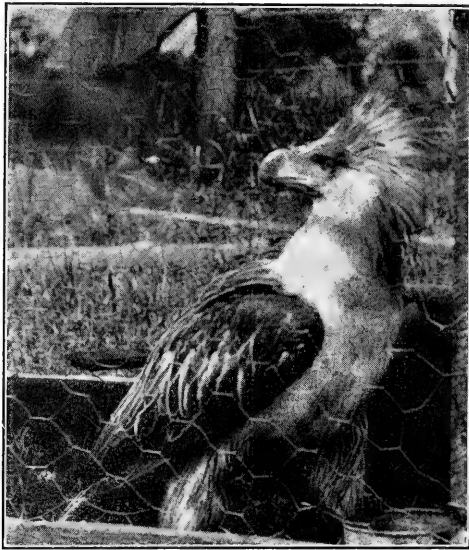
NOTING the Editor's request for articles, I concluded to send a word. Have had just a little time for collecting, but have taken about 80 species and wish to speak of one—the monkey-eating forest eagle, which Mr. W. R. Ogilvie-Grant made known as *Pithecophaga jefferi*.

I send two pictures of a living specimen, taken by Capt. James W. Van Dusen of the Med. Dept., U. S. A. The best picture (herewith reproduced) was taken when the bird was full of spirit and pride. The second was taken after the bird had broken its leg trying to force its way out of its prison. I have no doubt they are the only pictures in existence of this species. The bird was brought into the market by the Moros and purchased by Lt. Farrell, 15th Infy., U. S. A. It was killed during my absence to Manila and skinned by a Hospital Corps Sergeant. I put three hours' work on the skin on my return, and hope it is all right.

The descriptions of its spirits, and the manner of carrying its ruff constantly extended, given me by the Doctor, were very interesting. When they put in a chicken for its dinner, the bird would take it when hungry and eat it all; otherwise only the entrails.

I have since skinned and have in my collection another. In this one I found a monkey, not yet digested. The paws were torn off and swallowed whole. Then the next joint, and so on. It was eaten hair and all. The bird had then perched on a tree, to be shot by one of the Companies on a hike.

From the specimen in the picture, I took the following measurements in millimeters: Length, 1076.8; wing, 584; tail, 431.8; tarsus, 127; middle claw, 114.3; middle tail feather, width, 82.55. Measurements of the second specimen is in inches: Length, 40; spread of wings, 76; wing, 24. This bird was very poor and weighed only 8 pounds, whereas the weight given of a specimen described by Whitehead was between 16 and 20 pounds.



THE MONKEY-EATING FOREST EAGLE OF
THE PHILIPPINES

I occasionally see one fly from one hill to the other and may secure more. I also have a small long-winged eagle with stretch of wings two inches more than this short-winged species.

We are stationed on Mindanao by the shore of Lake Lanao, 2700 feet altitude, one of the most prolific places in the world. My wife has gotten nearly 1000 species of plants, about one-eighth of them new. I have been impressed with the large number of flycatchers. The last I took was a pair of brilliant gold color. We have so much rain that it makes collecting difficult.

Manila, P. I.

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

JOSEPH GRINNELL, Editor, - Pasadena.

H. T. CLIFTON, Business Manager, Box 404, Pasadena

WILLIAM L. FINLEY } Associate Editors
JOSEPH MAILLIARD }

Pasadena, California: Published May 15, 1907

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States, Canada, Mexico, and U. S. Colonies, payable in advance.

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other countries in the International Postal Union.

Claims for missing or imperfect numbers should be made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the Editor.

Advertising Rates on application.

EDITORIALS

As we have had to send in copy for this issue several days in advance of May 1, the date we fixed in our March issue on which to "close the polls" in the vote on certain usages, the final result of the vote will be announced in our July issue. We have received a number of extended arguments, for, as well as against, each of the questions. One of these replies, from Mr. Dawson, is printed in full on another page. We will admit that it presents to us the "capitalization" question in a new light. It pays to "argufy," as long as the contestants are each open to conviction. And we congratulate ourselves on having put these questions before our readers. We are *learning things*.

Whether to establish certain generic names by the "first species rule" or by "elimination" is lately holding the entire attention of several of our experts in nomenclature. Whichever contention wins out, a large number of bird names will have to be changed. For one generic name changed often means many new specific combinations. Mr. Stone and Dr. Allen, both members of the A. O. U. Committee, have come out within a few days of each other with exhaustive reviews of our North American genera of birds treated from the different standpoints. Incidentally a number of old names have been dug out, which the investigators agree will have to replace well-known names if the "law of priority" be strictly enforced.

All this is disheartening. It somehow

seems to us that Taverner is right. Most of the rules in the Code are purely arbitrary, such as the taking of Linnæus at 1758. Why not make one more arbitrary rule, for the sake of uniformity and common sense, and take the A. O. U. 1895 Check-List as establishing the generic names of North American birds for all time? We will just warrant that a three-fourths vote of Fellows and Members of the A. O. U. would authorize such a ruling. And why not? Our system of nomenclature doesn't mean anything in the way of phylogeny anyway. All it can do is to supply names and groupings; and these *ought* to be serviceable. Nomenclature is a game that only a dozen, or less, specialists play at; and the game is never ended. Why not settle on a set of names selected, say, on the grounds of most frequent employment in literature for the past twelve years? Wouldn't a shout of rejoicing be raised by the hundreds of people who are studying *birds* not nomenclature! If this majority would just assert itself, the microscopic minority would find little reason for the continuance of their labors, and their valuable energies would soon be directed into more profitable channels. We mean perfect respect for such men as Allen and Stone who are thoroly conscientious in carrying out the system at present in vogue. The work they do involves drudgery of a most trying sort, unrealized by those who have not attempted similar undertakings. It is the *system* we deprecate.

Our fellow Cooper Club member, Mr. H. H. Bailey, of 321 54th Street, Newport News, Virginia, extends to bird men generally a cordial invitation to look him up at his home during the present Jamestown Exposition. Mr. Bailey has arranged his extensive collections so as to be readily accessible for inspection, and these we have reason to know are well worth one's while to examine.

The Alexander Expedition left Seattle April 10, bound for southeastern Alaska in quest of specimens and information in several departments of natural history. The party is provided with every facility for thoro field work, even to a power boat and crew, so that sequestered islands may be readily visited. Mammals, birds, plants and molluscs will be given most attention. This is the best-equipped expedition which has entered the field on the north-west coast for many years, and we are looking forward to exceptional results. The party consists of Miss A. M. Alexander, who leads the expedition, Mr. Joseph Dixon, Mr. and Mrs. Frank Stephens, and Mr. Chase Littlejohn.

We learn from *Science* of March 15, that "Mr. Frank M. Chapman, curator of ornithology of the American Museum of Natural History, is engaged in making a collection for the museum of southern birds, especially of white herons in various stages of development."

Arizona is not being neglected this year ornithologically; for, aside from the two or three resident bird men, Mr. Austin Paul Smith is collecting in the vicinity of Benson, and Mr. H. W. Marsden is working the Tucson region.

We are indebted to Mr. Robert B. Rockwell, of Denver, for the following information in regard to the new scientific society lately formed in Colorado.

On December 18, 1906, a number of the scientific workers of Colorado met at Denver and organized the Colorado Biological Society, which has been incorporated under the laws of the State of Colorado.

The Charter Membership consists of men specializing in Botany, Mammalogy, Ornithology and Entomology and altho few in numbers at present, the society will endeavor to secure as members all of the scientific workers of Colorado and adjoining states.

The policy of the new organization will be to foster and encourage practical field work, with "results" as the watchword. Especial attention will be paid to the collection and preservation of existing biological information relative to Colorado, and investigation along all lines of scientific biological work which have heretofore been more or less neglected.

There has been a growing demand for an organization in the State which would tend to bring scientific students thruout the Rocky Mountain region into closer touch with each other and enable all to work more or less in unison; and it is hoped that the new Society will not only furnish the means to this end but that it will go further and perform the same function for Colorado that the Cooper Club has for California.

The Society has accepted an invitation to affiliate with the Colorado Museum of Natural History, located at Denver, which gives it the necessary backing and support so necessary to a young organization of this kind; thru this combination it is expected that a great deal of work of scientific and practical value will be accomplished.

The charter membership consists of Messrs. Ellsworth Bethel, Victor H. Borchardt, Geo. L. Cannon, Fred M. Dille, J. Clarence Hersey, L. J. Hersey, and Robert B. Rockwell, all of Denver, W. L. Burnett of Ft. Collins, E. R. Warren of Colorado Springs, and W. D. Holister of Albuquerque, N. M.

All communications to the Society should be addressed to Fred M. Dille, Corresponding Secretary, 307 Continental Bldg., Denver, Colorado.

COMMUNICATIONS

IN REGARD TO THE MOOTED POINTS

Editor THE CONDOR:

If I may be pardoned in exceeding the "postal card" limit, I should like to touch at length on two of the mooted points; for one cannot express either reason or emotion in a single written "Yes" or "No".

(1) Unquestionably those who prefer the metric system are justified by current usage in advanced scientific circles, and they have the future with them. But, as certainly, measurements expressed in the metric system are unintelligible to most of us. They may be laboriously puzzled out, but they are not quickly *sensed*, as are measurements in inches and hundredths. The case is quite hopeless for those of us who do not happen to have enjoyed the early advantages of drill in the metric system. For myself I think I could derive the equation for the Conchoid of Nicomedes with passable credit; but if you told me that an egg was 26.23 mm long, I should have to study to know whether you had a California Condor's or an Anna Hummingbird's. Please, Mr. Editor, be patient with those of us who, altho only half way across the stage, are far too busy to go back and begin over again.

(2) Reformed spelling? Yes; altho I do not follow the President thru thick and thin. The substitution of *t* for *ed*, as in *blusht* and *kist*, is pedantic and, quite evidently, unpopular.

(3) For the capitalization of vernacular names, a hearty *Yes!* And for weightier reasons than those of prominence and eye-ease, already recited.

The accepted vernacular names of American ornithology have acquired greater stability than the vaunted Latin. The Latin name of the Evening Grosbeak has been changed twice within the last decade; but no one has thought of changing the vernacular as whimsical as it is. The Western Winter Wren has been *Troglodytes* sp., *Anorthura* sp., and *Olbiorchilus* sp., within recent memory, but the note-book shorthand is still "W. W." and always will be, whatever mire of Latinity "*varium et mutabile*" they try to stick it in. Ergo the English name in fact deserves as much consideration at the hands of an editor who would be understood as the scientific name.

But more important still is the fact that the name of a species, whether English or Latin, is a proper name. The basis of distinction between named birds is not individual but specific. We do not call an Audubon Warbler "Mary" to distinguish it from other individuals, but our common aim and interest is to declare it *propre*, or peculiar, as compared with birds of other species, as Myrtle Warbler, Palm Warbler, etc.

This is neither falsification of grammar nor hair-splitting. Moreover, we require capitalization of species in the interest of accuracy. If I speak of an evening grosbeak, I may refer to a specimen of *Habia*—or is it *Zamelodia* now?—*Zamelodia melanocephala*, seen at evening; but there is no uncertainty whatever if I speak of an Evening Grosbeak.

As matter of fact this principle of capitalization in bird names has to be applied still further, in the interests of accuracy. When I read of "warblers in the woods" how shall I know that the author does not refer to Thrushes, Catbirds, Vireos, and all birds which warble? But if he says "Warblers" he can of course mean only *Mniotiltidae*.

By all means, Mr. Editor, if we would be intelligible, logical, and consistent, let us use capitals *always* in presenting specific names of birds, and elsewhere in referring to the higher groups, wherever uncertainty is likely to exist in the mind of the dullest reader.

Respectfully yours,

W. LEON DAWSON

Seattle, April 11, 1907.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MARCH.—The regular meeting of the Northern Division was held in East Hall, University of California, Berkeley, on March 9, 1907. A very interesting and instructive paper was read by Prof. Wm. E. Ritter on "Ornithology for a Student of Evolutionary Problems," in which was set forth the importance in Biology of close observation and careful recording, and the part that Ornithology has played in the general scheme in the past, and the part that it will play in the future. He emphasized the need of more careful and searching studies in Ornithology, which should deal with the whole life cycle of the bird from the egg to the adult, and pointed out the possibilities in Ornithology as an advanced study, for still further advancement. An informal discussion followed the paper after which the business session was held, with Pres. D'Evelyn in the chair.

The minutes of the previous meeting were read and approved.

The following propositions for membership were made: Dr. and Mrs. Burnham, 2335 Warring street, Berkeley, both by Prof. W. E. Ritter; John F. Ferry, Chicago, Ill., by H. S. Swarth; A. O. Treganza, Salt Lake City, Utah, by C. S. Sharp; W. L. McAtee, Biol. Surv., Dept. Agr., Wash., by H. T. Clifton.

It was announced that the application of Henry K. Coale of Highland Park, Chicago, Ill., was read before the Southern Division several months ago and sent to this Division for action, but was unfortunately lost in the mails. Since the matter has been mentioned in the Club before, his name was considered to have been proposed in this Division and he was duly elected to membership. Mr. Louis P. Bolander was also elected to full membership.

A communication from J. Eugene Law ask-

ing that the Northern Division consider the proposition made by the Southern Division at their last meeting to increase the subscription of THE CONDOR to non-members from one dollar to one dollar and a half, was read. Considerable discussion was raised concerning the proposition but it was finally decided that, considering the standard of THE CONDOR and its efficiency, such a raise in subscription price was very reasonable, and was therefore adopted.

At the previous meeting the names of eleven members were recommended for suspension for non-payment of dues. Of these eight had failed to pay up before this meeting was called tho fully notified and were therefore formally suspended. The following resignations were accepted: R. F. Rooney, Juliette C. Harding, Louis Wessel, Nathan M. Moran. Meeting adjourned.

H. O. JENKINS, *Secretary*.

SOUTHERN DIVISION

FEBRUARY.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was called to order Feb. 28, 1907, by President Morcom in the office of H. J. Lelande in the City Hall, Los Angeles, Cal., with members Grinnell, Willett, Lelande, Clifton, Antonin and Alphonse Jay, Linton, Chamberlain, Watson, Cosper, and Law present.

The minutes of the last meeting, Jan. 31, 1907, were read and approved.

Applications for active membership were proposed as follows: Mr. W. L. McAtee, Biological Survey, Washington, D. C., by H. T. Clifton. On motion by Mr. Lelande, seconded by Mr. Cosper, and duly carried, Mr. A. O. Treganza, Salt Lake, Utah, Mr. Jesse C. A. Meeker, Danbury, Conn., and Mr. Howard Wright, Pasadena, Cal., were elected to active membership in the Club, the two former subject to the approval of the Northern Division. The resignation of Mr. J. B. Fuedge was accepted. Also the resignation of Mr. J. G. Brown was accepted as of date Jan. 1, 1905, the previous action of the Club in dropping Mr. Brown for non-payment of dues, at meeting Jan. 12, 1905, being rescinded, as Mr. Brown has now paid his dues in full to that date. The resignation of Mrs. J. M. Willard was also accepted.

Mr. Linton exhibited a few skins taken recently including a Pacific fulmar, taken in San Diego Bay, and Townsend fox sparrow and varied thrush taken on San Clemente Island.

The balance of the evening was spent in ornithological chat, very interesting to those participating, but hard to record. Adjourned.

J. EUGENE LAW, *Secretary*.

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THE CONDOR

A Magazine of Western
Ornithology



Volume IX

July-August, 1907

Number 4



COOPER ORNITHOLOGICAL CLUB



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Entered as second-class matter May 4, 1906, at the post office at Pasadena, California,
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Volume IX

July-August 1907

Number 4

THE GREBES OF SOUTHERN OREGON

By WILLIAM L. FINLEY

WITH PHOTOGRAPHS BY HERMAN T. BOHLMAN

FOR years the lake region of southern Oregon was the most profitable field in the west for the plume hunter. Up to the summer of 1903 many, many thousands of grebes and terns were slaughtered thru this region to supply the millinery market. Scores of professional hunters shot these birds and shipped out bales of the skins till now there are comparatively few of these birds left about Lower Klamath and Tule Lakes. This traffic in bird skins has been checked, but it has never been stopped.

After spending almost two months cruising these lakes during the summer of 1905, we found but one colony of Caspian Terns (*Sterna caspia*) on the Lower Klamath, and two small colonies of Forster Terns (*Sterna forsteri*), one at the north end of Tule Lake and the other along Klamath River. The American Black Tern (*Hydrochelidon nigra surinamensis*) nested in the same colonies with the Forster Tern and were even more common.

Formerly these velvet-plumaged birds were very common thruout this lake region. A peculiar habit of the terns would soon have led to their extinction. As soon as a hunter winged one of them and it fell fluttering to the water, instead of the other terns flying away, they hovered about excited and inquisitive and were shot as fast as the hunter could re-load. The wings and tail were all that the hunters used from the body of the tern and these netted about forty cents a bird.

The Western Grebe (*Aechmophorus occidentalis*) was the greatest sufferer at the hands of the market hunter. This diver, of the glistening-white breast and the silvery-gray back was sought not without reason. The grebe hunters call the skin of this bird fur rather than feathers, because it is so tough it can be scraped and handled like a hide, and because of the thick warm plumage that seems much

more like the fur of a mammal than the skin of a bird. These skins, when prepared and placed on the market in the form of coats and capes, brought the prices of the most expensive furs.

A grebe is a bird that is difficult to shoot, because it swims so low in the water and is so quick in its movements. The professional hunters use a special gun that shoots a charge of shot within the area of a foot square at a distance of about forty yards. The favorite way of shooting was from a blind along the channel where the birds went back and forth from the feeding grounds, or many of the hunters thought nothing of going right among the colonies where the birds were nesting.

Formerly the greatest grebe rookeries were found in the tules on the north side of Tule Lake, but the hunters have left few birds in this locality. The only really large colony that we found was on Lower Klamath Lake, and that had probably not been disturbed by hunters. We estimated that there were several thousand grebes nesting about this part of the Lake. A year later, during the summer of 1906, Mr. Frank Chapman visited this same locality and found scarcely any of these



A CORNER IN THE WESTERN GREBE COLONY; ONE BIRD IS STANDING ON ITS NEST

birds left; for market hunters were camped not far away.

Lower Klamath Lake is a body of water about twenty-five miles long by ten or twelve miles wide. About its sides are great marshes of tules. The whole border is a veritable jungle: extending out for several miles from the main shore is an almost endless area of floating tule islands, between which is a network of channels. Here, where we found the nesting colony of Western Grebes, we had good chances to study the habits of these birds.

About one of these islands we found the floating grebe nests every few feet apart, and counted over sixty in a short distance. We rowed up to one end and landed and then waded along just inside the thick growth of tules that grew along the edge. From this place, partly concealed as we were, we could look thru the tules and see the grebes swimming and diving near their nests. Across the channel along the edge of the opposite island were many more grebe nests, and some of the birds were sitting on their eggs.

The nesting habits of the Western Grebe vary somewhat from those of the

American Eared Grebe. On both sides of the Klamath River is a vast area of low land covered at this season with two or three feet of water. Here we found an occasional nest of the American Eared Grebe (*Colymbus nigricollis californicus*), but nowhere did this bird nest in colonies. The nests were made of rotten weeds that had been pulled together and left floating on the surface. During the day the parents always seemed to be away and the eggs were covered with a layer of wet weeds. It had always been a wonder to me how eggs could ever be hatched when they were lying partially in the water and covered with the damp reeds. I pulled off the top covering and felt underneath, and the platform was warm all the way thru, even to the water below. The heat of the sun on the decaying reeds warms the whole nest so that the eggs are kept about at body heat.

The nests of the Western Grebe were, as a rule, built up of dry reeds higher out of the water than those of the Eared Grebe. I never saw a case where this bird covered its eggs with reeds while it was away. Many times we saw them sitting on their eggs during the day. In other cases, they seemed to leave the eggs to be hatched out partly by the sun. The usual number of eggs we found in a set were three and four, altho we often found six and seven. In several cases, we found places among the dry tules where an extra large set of eggs had been laid. We saw sixteen eggs in one set, but there had been no attempt at a nest, and the eggs had never been incubated.

On two or three different occasions, we watched one of the little Western Grebes cut his way out of the shell and liberate himself. The wall of his prison is quite thick for a chick to penetrate, but after he gets his bill thru in one place, he goes at the task like clock work and it only takes him about half an hour after he has smelled the fresh air to liberate himself. After the first hole, he turns himself a little and begins hammering in a new place and he keeps this



NEST OF WESTERN GREBE; ONE EGG SHOWS CIRCULAR ROW OF NICKS, AND IS ALMOST READY TO HATCH

up till he has made a complete revolution in his shell, and the end or cap of the egg, cut clear around, drops off, and the youngster soon kicks himself out into the sunshine. It does not take his coat long to dry; in fact, he often does not give it a chance, for his first impulse seems to be to take to water and ride on his mother's or father's back. The grebe chick never stays in the nest longer than a few hours.



THE NEAR BIRD IS CARRYING A CHICK ON ITS BACK,
THE HEAD OF THE YOUNGSTER JUST SHOWING

A chick that is just hatched is clothed in the most delicate coat of soft gray fur, lighter below and darker on top.

A grebe is one of the shyest of all birds to photograph, for at the slightest sound or motion, it disappears like a flash. He stays under water quite a while, and next time he appears he is probably fifty yards away. For two different days we sneaked about at the edge of the water in the high tules and tried for pictures of these birds. We had to part the reeds and build them up about us so that we were completely hidden and had only a narrow place out of which we could aim our

camera. It took patience to sit there in a squatted position for hours at a time. The chances for pictures were often few and far between; but we had good opportunities to study these wild and wary birds. We could see many things with the eye, by watching thru the thick reeds, that could not be caught with the camera.

The first day, as I lay hidden in the tules waiting for a picture, I saw a pair of grebes swimming along only twenty feet distant. I could catch glimpses of them as they passed just beyond their nest. One of the birds carried



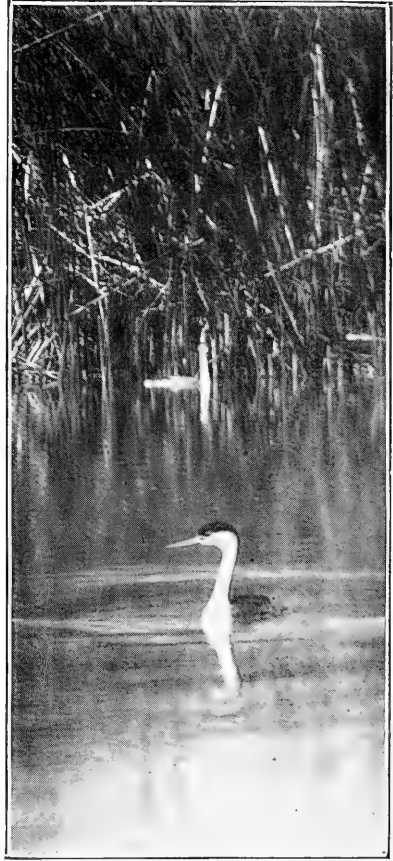
YOUNG WESTERN GREBE LIFTED OUT OF WATER
ON END OF OAR

a chick on its back. The grebes have a way of taking their young with them, for the little fellows lie on the back just under the wing-coverts with only the head sticking out. At the slightest alarm, the mother raises the feathers a trifle and covers the chick completely. One can readily tell when a grebe has a chick on

her back even if it is not visible, because she generally swims higher in the water.

As I was lying low in the reeds, another pair of grebes swam past. The back of one bird was high out of the water. She was carrying two young, but at the time neither was visible. But soon one of the youngsters got anxious to crawl out on the hurricane deck, as it were. Each time his head appeared, the mother would reach back and cover him up. Finally one of the little fellows crawled clear out in full view and she let him sit there for a moment. But I could see this was not the customary way of riding, for she soon raised her wing and covered him. Occasionally she picked up bits of something from the surface and reaching back, fed her babies. A little later, while the father was swimming near by, I saw one chick slip off the mother's back and go paddling toward him. He seemed to lower his body slightly in the water and the youngster floated aboard.

The old grebes dive and swim readily under water with the young on their backs. But occasionally when they are frightened, they lose their chicks. Several times while we were rowing about the Lake, we came unexpectedly upon old grebes that were carrying young. At such times, when the old birds are scared, it seems very difficult for them to hold the chicks in place when they dive. In most cases, the young birds come to the top of the water after the mother dives. When we approached the little fellows they tried to dive, but could not stay under long or go very deep, so they were easily caught.



ADULT WESTERN GREBE

Portland, Oregon.

NESTING HABITS OF PHAINOPEPLA NITENS

By HARRIET WILLIAMS MYERS

ON the evening of June ninth, 1906, I came upon a female Phainopepla engaged in catching insects from the top of a tall sycamore tree that grew part way up the bank of the Arroyo Seco at Garvanza. Her mate was equally busy building a nest in a small, half dead sycamore tree not far away. The nest, which was probably half finished, was placed about twelve feet from the ground in an upright crotch formed by the main trunk and a small limb. It was in plain

sight in what seemed to me a very exposed place, there being no leaves near it, and the old scraggly tree seemed to afford poor protection.

On that evening when I first found the nest, I watched until nearly dark and finally left the male still building and the female catching insects. Not once had she offered to assist in the nest building. At six A. M. the next morning the male was at work, but the female was nowhere in sight. I was unable to stay long at that time, but when I returned at nine-thirty the male was still working, tho there was a longer interval between his coming than there had been in the early morning or the night before.

His manner of approaching the tree was in a half or three-quarter circle. He would come flying along on about a level with the tree top, and just before reaching the tree would descend in a circular sweep, sometimes alighting on a twig near the nest, sometimes landing in the nest itself.

At twenty minutes to ten, when the male came, he deposited his mouthful of fine material in the nest, then reached over and worked upon the outside. Having arranged this to his satisfaction, he turned about in the nest to shape it; then, still sitting squarely in it, he sang his low warbling song. It was scarcely more than a whisper and had I not seen the throat move I might have doubted its coming from a bird. Twice that morning I saw him sing on the nest.

Shortly before ten the female bird appeared in the tree for the first time, to my knowledge. She came from the top but did not circle as was the custom of the male. Before she could reach the nest her mate drove her away. However, when the male had gone, she slipped onto the nest with a mouthful, shaping it before she left. Soon after this, both birds came at once and the female got the nest. The male settled down beside her and both worked upon it. The material the female brought at this time was long and looked like white sage.

In an hour and a half that morning both birds came to the nest fourteen times, the male nine and the female five times. The longest interval was thirty minutes, the shortest three. This was one of the hottest mornings of the year, and at eleven o'clock the sun beat down upon the nest. Both birds came panting and it was at this time that work was slackened.

After the nest was finished and the eggs laid, the birds for some unknown reason deserted it. From the top of the Arroyo I could see that there were eggs in the nest but could not tell how many. Later when I was sure that the nest was deserted and I went to get a photograph I found it torn and the eggs gone. An examination proved it to be made of fine gray material. There was one old piece of soiled gray twine, some leaves and stems of white sage, and short, fine fibers. It was a firm, compact, saucer-shaped nest.

On June eleventh another male *Phainopepla* commenced building in a very scraggly, open, pepper tree that grew in the Parkway on Avenue Sixty-six, just across from my home. Tho from my porch I could watch their comings and goings I could not see the nest plainly. There was no place where I could conceal myself and I was so afraid that I would scare them away that I did not attempt to watch at the nest as I had at the Arroyo one. However, I was able to see that, as in the case of the other nest, the male did most of the building. The female helped some, but the most of the time she was about on the wires in the neighborhood, and nest-building concerned her not. The male had the same way of circling the tree when he came to it as in the other case.

I thought the material of this nest was finer than that of the other. Once the male came into the yard and stripped the fibers off from a castor bean tree, and twice I saw him taking something from the bark of the pepper tree. The nest

itself was ten or twelve feet from the ground in an upright crotch formed by several small branches. It exactly matched the bark and was inconspicuous until the birds stuck a piece of white cotton on one side of its upper edge. This was added after sitting had commenced.

Whether the male Phainopepla sang on the nest I know not; but often during the nest building he came to the wires directly in front of the house and sang the same sort of a song the Arroyo bird sang, only it was much louder. He also gave several different call notes.

On June sixteenth, five days after nest building began, the female first went to the nest and remained for any length of time. Toward night I saw her skimming thru the air, swallow fashion. The next day it was evident that brooding had commenced; for twice, as I passed near the tree, I scared the female off. I found in the subsequent watching that she was shyer than the male and would never stay on the nest when I came near the tree. On the other hand the male did not mind, and stayed by the nest under the closest scrutiny.

The work of incubation was very equally divided between the two birds. Seldom was the nest left alone. When the female left it, as she frequently did, the male took her place and kept it until she returned.

On the afternoon of July first, fourteen days after sitting had commenced, I saw the male Phainopepla go to the nest, feed, and then slip onto it. In five minutes the female came and the male left; the female fed, then brooded until the return of the male in about five minutes. This alternating was kept up until seven o'clock when the female took the nest for the night. In five minutes the male flew into the tree and out again without stopping. Three minutes later he did the same thing, flying near the nest as if to see that all was well for the night, then flying out and away into the Arroyo until out of sight.

In the morning I watched at the nest for over an hour and no birds came near it. At noon a male bird sang on the wire before the house, and gave his two notes, "beck" and "scat", but no female was anywhere about. Once the male flew thru the nest tree. Of course, I cannot know what was the tragedy of the nest, but I have always thought that some cat took mother and young in the night.

At four P. M., June twenty-six, I found another Phainopepla's nest in a small upright crotch high up in a sycamore tree on the Arroyo bank only a few yards from the first nest I had found. I believe it was the same pair of birds. The male was on the nest, and for ten minutes he stayed there; then he slipped off and was about on the tree near the nest for five minutes, when he returned and remained ten more minutes until the female returned and took his place. Fifteen minutes after the male had left the nest and the tree, I heard his liquid call note. In five minutes more he drove another male away from the vicinity of the nest, and in another five minutes (twenty-five from the time he left) he returned and took the female's place.

The next morning when I visited the tree the female was brooding. Soon she left, and for thirty-five minutes the male had charge of affairs. During this time he was on and off the nest four times. The first twenty minutes were spent in quietly sitting on the nest; the rest of the time in slipping on and off at short intervals. I imagined I could feel his relief when his dallying spouse finally came.

I have every reason to believe that this pair of birds raised their young; but unfortunately I was away at the time of nest leaving. When I returned, a female and at least two birds that resembled her were about in the sycamores, and I doubt not that they belonged to the sycamore nest.

Los Angeles, California.

THE THICK-BILLED PARROT IN ARIZONA

By AUSTIN PAUL SMITH

AN immense flock of this species (*Rhynchopsitta pachyrhyncha*) were observed by miners at Bonita Park, near Cochise head in the Chiricahua Mountains, during the month of August, 1904. They were first noticed about noon of the 26th, by a Mr. Dufferik, and were then feeding on pinyon nuts. Some of the birds were on the ground, searching for the fallen nuts. Their confiding nature, and the fact that they roosted in the trees nearby, enabled Mr. Dufferik to capture one alive, a bird of the year, and now in possession of his sister who resides at Globe, A. T. Seven birds were also shot by him, and others by men in the camp. The parrots remained four days before finally disappearing.

This flock was estimated at from 700 to 1000, by those who observed the birds.



A WILD THICK-BILLED PARROT, PHOTOGRAPHED
IN SOUTHERN ARIZONA

Among these were a number of young birds, easily distinguished by plumage and smaller size.

Their appearance greatly excited the miners, who were inclined to consider it a lucky sign, with "strikes" sure to follow.

The tameness of the birds, along with their inquisitive disposition, gave ample opportunity for photographing them, and the view here presented is among the snapshots secured.

I am inclined to believe from conversation with men who have spent considerable time in the southern Arizona mountains, that *Rhynchopsitta pachyrhyncha* may be looked for every few years or so, and is not nearly as casual as supposed. Also that it wanders into the Whetstone, Huachuca, and perhaps other ranges, as well as the Chiricahuas.

Benson, Arizona.

SUMMER BIRDS OF A PRAIRIE LAKE

By G. WILLETT

I N 1903, while spending the summer in the prairie country of northeastern Montana, I observed with a great deal of interest the breeding of the many species of water birds which make this region their summer home. Upon being told of the colonies of birds breeding at Lake Bowdoin, which is fourteen miles east of Malta on the Great Northern Railroad, I determined to lose no time in making an investigation.

On the afternoon of June 19, I alighted from the train at Bowdoin section house and found myself on the bank of the lake, which was about three miles in diameter and nearly circular, bordered by grass and tules and containing several small islands. After ascertaining that there was no boat to be had, I started on foot to explore the grassy swamp bordering the open water.

The first signs of nests that I found were some hollows on a piece of high ground which had evidently been inundated by the late rains and their contents washed away. From some egg shells found in the grass near by and the presence of two or three Wilson Phalaropes I decided that the nests were those of this species.

Upon wading a short distance into the marsh I flushed an American Bittern and found one fresh egg of this species in what was apparently an old nest of the Mud-hen. A little further on I flushed a duck from a bunch of tules and, being determined to make no mistakes in identification, I brought her down with a load of number sixes. She proved to be a female Canvas-back (*Aythya vallisneria*) and the nest contained nine slightly incubated eggs. This nest was built over shallow water like that of the Red-head, but afterwards I also found this species nesting on dry ground like the Mallard. After walking some distance farther and passing numerous nests of the Mud-hen I dropped a female Spoon-bill (*Spatula clypeata*) as she left her nest of down which was partly under a pile of driftwood on a dry hummock. This also contained nine eggs of nearly the same shade as the Canvas-back's but of course much smaller.

I then spent some time trying to locate the nest of a Short-eared Owl which flew up from the grass ahead of me, but in this I was unsuccessful. As it was getting dusk by this time I left for home resolving to return at an early date.

Returning on June 28, I made directly for the point of shore that was nearest the small islands previously mentioned. I took off my clothes and carrying them above my head succeeded in wading to the first and largest island which was about 150 yards out. I was met half way by a swarm of Common Terns and Avocets. As I stepped ashore the ducks started to rise from the grass all around me and I found myself in the midst of four or five acres of eggs. The bare spots between the grass patches were occupied by the Terns and Avocets, and I also found two nests of the Spotted Sandpiper, each containing four eggs.

Every bunch of grass held a duck's nest with from six to twenty-four eggs. There were Mallards, Canvas-backs, Spoonbills, Blue- and Green-winged Teal in abundance; also a few Baldpates. Many nests contained eggs of two or more varieties, so they must have occasionally become mixed in their house numbers. The nests were all finely lined with down and in most cases were well hidden in the long grass. I also found a nest of the year before containing two addled eggs of the Canada Goose, but none were breeding here at this time.

About three-fourths of a mile farther out was another island around which I

could see many birds flying, but as a heavy wind had roughened the water considerably I decided to let that go until the next trip, and after packing a set or two of each variety I had found, I wound my way homeward.

Early on the morning of July 4, I was on the spot firmly resolved to reach that second island. I found the island no nearer than before but the water was as smooth as glass and, arming myself with a ten-pound wooden pickle bucket to bring back the spoils, I started out. After a half-hour's swimming I reached the goal and found it well worth the trouble. Altho I found no rarities here, the scene could not fail to interest any lover of ornithology. This island was smaller than the other, containing only about two acres. The beach was occupied by a colony of Ring-billed Gulls (*Larus delawarensis*), most of their shallow nests containing two or three young birds. I secured a few sets, however, which I was able to save. In one corner of the island was a small colony of White Pelicans, the nests containing two eggs each, mostly fresh. I found one lonely, half-grown nestling and, without exception, it was the ugliest thing I ever saw.

A few ducks were breeding here also, but the greater part of the island was taken up by a rookery of Great Blue Herons (*Ardea herodias*). There were hundreds of their nests flat on the ground among the bushes, built to a height of two or three feet. At this date most of them contained nearly full grown young, and very pugnacious they were, too. They clearly considered me an intruder and their reception of me was not conducive to much familiarity on my part.

Having thoroly explored the island and finding nothing further of interest I filled my wooden bucket with donations from the Pelicans and Gulls and made the return trip without trouble, tho my cargo made my progress rather slow.

This was my last visit to the lake that year but I expect some time to return and hope to find no diminution of the numbers of this interesting colony.

Los Angeles, California.

MEASURING A CONDOR

By M. FRENCH GILMAN

IN the spring of 1901, while stationed as Forest Ranger at Warner's Ranch, San Diego County, I assisted in measuring a live California Condor (*Gymnogyps californianus*). A cattle man shot it on Volcan Mountain, breaking one wing, and after a fight succeeded in getting it home. Here it was confined in a large roomy coop and its shattered wing carefully dressed and put in a sling. The bird, however, insisted on tearing open the bandages and picking at the wound. The lady of the house had named it Polly, tho it was a fine male, and was trying to make a pet of it without getting in reach of its powerful beak. For food they occasionally gave it a beef liver or a jack rabbit.

My friend, Nathan Hargrave of Banning, was with me and we persuaded the owner to turn it loose in the enclosed yard so we could see it in action. A noble bird it appeared when released, except for the one wounded wing. The size of its feet seemed remarkable, tho not as dangerous looking as the talons of an eagle, simply big and honest-looking foundations.

The bird strode about the yard and entered the open door of a shed. Here stretched on a bed lay the mail carrier enjoying a Sunday nap. The vulture hopped upon the bed and of course the man woke up. He was startled by this

strange bedfellow and began kicking frantically at the intruder and making inarticulate noises with his mouth. The bird seized him by one foot, fortunately he had retired with his boots on, but we rushed to the rescue and shoo-ed the combatants apart.

We were all very cautious about approaching Mr. Vulture, as familiarity might breed calamity. Only a short time before, an Indian had lost about half the fleshy part of his thumb by undue proximity to the captive's beak. Another Indian had the skin stripped from a finger by trying to pull away after the bird had seized it. The owner finally lassoed the great vulture and we proceeded to measure him. The number of assistants the process required reminded me of the old nursery rhyme telling how many people it took to extract the lacteal fluid from an ancient female specimen of *Ovis domestica*.

One man took firm hold of the bird's big neck and head; another grasped the feet; two extended the wings while two others stretched a tape line across the expanse of wing. Owing to the fracture we could not fully expand one of the wings, so the bird measured only 9 feet 10½ inches. I estimated that the wing would have been three inches longer if normal, thus making the expanse well over ten feet. On account of difficulty with the broken wing we did not attempt any other measurements. The owner told me he had killed a female the year before that measured twelve feet across the wings. I am told of another specimen shot several years ago that measured over eleven feet.

While we were taking the bird's measure a diversion was created by a ten year old boy who was "rubbering" and got too close to the business end of the vulture. The boy's cries called attention to the fact that one of his fingers was in the vise-like grip of the beak. A man instantly seized the boy to prevent him from pulling back, and a chisel had to be used before the bulldog hold on the finger could be loosened. We examined the finger and found blood blisters on each side—just as if it had been pounded with a hammer. These instances showing the mouth power of the Condor give me a proper appreciation of the nerve and courage of Mr. Finley as shown by his "bearding the lion in his den," the Condor in his lair.

My acquaintance with the California Vulture or Condor has been limited, tho of long standing. In former years when stock-raising was of much importance in our locality the birds were comparatively numerous; while now the sight of a specimen is a rare treat, at least in my part of southern California. During the summer of 1888 I visited Bear Valley and Holcomb Valley in San Bernardino County and saw a number of them. Many cattle ranged there during the summer months and furnished food for both buzzards and Condors. I counted fourteen of the great birds around a dead steer one day, while a big flock of buzzards stood at a safe distance waiting for the "core."

For several years a pair of Condors frequented Snow Creek falls, about sixteen miles east of Banning, California, on the north slope of San Jacinto peak. Their nest was situated in a big fissure half way up on a precipitous 500-foot rocky wall, and to reach, would require wings, a balloon, or 300 feet of rope along with more daring than most men possess. I know of no attempt being made to approach it and finally some hunter shot one of the birds. Now the place knows Vultures no longer.

Another pair nested for some time in the San Jacinto range about ten miles east of Banning. The nest, as in the other instance, was in a cave or fissure high on the side of a cliff which overhung at the top—as near inaccessible as could well be. I do not know of anyone molesting the birds, but they have not been seen for

several years. Mr. Hargrave, before mentioned in this writing, discovered the nest after watching the birds a long time.

I have been told that the birds are fairly numerous in a certain desert range of mountains; but I am afraid, as many others are, that the extinction of this great vulture is only a matter of time, not a long time either.

In closing I might mention that in early days the Mexicans used the large, hollow wing quills for the purpose of storing and transporting gold dust.

Shiprock, New Mexico.

ENGLISH SPARROW NOTES

By WILLIAM L. FINLEY

CONCERNING the notes on the English Sparrow (*Passer domesticus*) in a late issue of THE CONDOR, it seemed strange to me when I first went to Los Angeles not to find this bird about the streets, especially since it is so common in other parts of California. It would be interesting to have the records of other cities and know to what extent this foreigner has spread thruout the State.



ENGLISH SPARROW'S NEST INSIDE A HORNET'S NEST;
MALE SPARROW JUST ENTERING WITH FOOD
FOR ITS YOUNG

The Bulletin on the English Sparrow, published by the Department of Agriculture in 1889, showed that none of the region south of Monterey had been invaded.

When I first came to Portland in 1887, I didn't find an Englisher in the city. The bird was unknown here. The first pair likely came in the following year; for in the spring of 1889, I found a pair had reared a family about an ivy-covered house on Fourth and Pine streets. Since that time I have watched the population of the city grow till there is hardly a street that isn't overcrowded from the river to the hills.

The most unique example of sparrow nest-building we found one year when we discovered an Englisher in possession of a hornet's nest. The hornets had built up under the projecting eaves of the front porch of a cottage, just beside the bracket. I don't know whether the hornets left voluntarily or with the aid of the sparrows. The birds entered the nest thru the triangular hole in the bracket and had pulled out a part of the comb and replaced it with grass and feathers. As the young sparrows grew I expected to see the bottom drop out of the nest, but it didn't; it lasted for a second brood.

Portland, Oregon.

FROM FIELD AND STUDY

The Vermilion Flycatcher at Santa Barbara.—On the 15th of March, 1907, on the Modoc Road west of Santa Barbara, I came upon a Vermilion Flycatcher. It was catching insects after its manner, perching between whiles upon the fence posts or the wire, and now and then betaking itself for a little to the top of a neighboring oak. It seemed but yesterday, tho it was four years ago, that I had seen my first bird of this kind (the first of many) doing the same thing, with the same phoebe-like flirt of its tail, from a wire fence at Tucson, Arizona. Here, as there, the bird was very "observable", and I stayed with it for fifteen minutes or more, admiring its brilliant color, and in my enthusiasm pointing it out to a passing school boy, to whom I lent my twelve-power field-glass for an observation. "Yes," he said, when I inquired if he had "got it"; "yes, it is red and everything."

This, I understand from the Editor of THE CONDOR, is at least one of the northernmost records for the species in California.—BRADFORD TORREY, *Newton Lower Falls, Massachusetts.*

Where Does the Western Boundary Line Run for the Arizona Quail?—I recently made a trip from Mecca, California, around the western shore of the so-called Salton Sea to Calexico, on New River, and at that place we crossed to Lower California. We went thru the pass at the north end of the Cocopah range, into and down the valley that lies between the Cocopah and Coast Ranges for about 70 miles. We more than circled the former range without once getting out of the living ground of *Lophortyx gambeli*. How much further west or south they live I do not know, but would much like to. Having found them on the west side of the Cocopahs I was not, of course, surprised to find them east of it. Kindly enlighten me thru THE CONDOR.—HERBERT BROWN, *Tucson, Arizona.*

Notes from Clipperton and Cocos Islands.—In looking over "The Birds of Clipperton and Cocos Islands," by Messrs. Snodgrass and Heller, on my return from the Galapagos in 1902, I noticed the absence from their list of several species that were present on the islands when our party called. We stopped at Clipperton Island November 19, 1901, and went ashore for several hours. I saw on Clipperton Island in addition to the birds seen by Messrs. Snodgrass and Heller: *Squatarola squatarola* (Black-bellied Plover), two seen; *Numenius hudsonicus* (Hudsonian Cur-

lew), one seen; *Plegadis* (?) (A black Ibis), one seen; *Fulica americana* (American Coot), two seen feeding under banks on the edge of the lagoon. Several hundred ducks were seen, the majority being of the following species: *Dafila acuta* (Pintail); *Mareca Americana* (Bald pate); *Querquedula discors* (Blue-winged Teal); *Spatula clypeata* (Shoveller); and a single *Fuligula vallisneria* (Canvasback). Tho several flocks flew quite near me in circling about the lagoon the only one shot was a Shoveller and this one was only winged and was not secured. *Sula variegata*—Amongst the thousands of Blue-faced Boobies, two of this species were seen and one of them, a female, shot. The other seemed to be paired with a Blue-faced Booby.

On Cocos Island, January 26, 1902: *Aegialitis semipalmata* (Semipalmated Plover), four seen; *Streptilas interpres* (Turnstone), six seen; *Butorides virescens* (Green Heron), one shot; *Nyctanassa violacea* (Yellow-crowned Night Heron), two seen; *Querquedula discors* (Blue-wing Teal), one shot, two more seen; *Sula variegata* (Variegated booby), two seen; *Falco peregrinus* (Duck Hawk), one seen.—R. H. BECK, *Monterey, California*.

The Mew Gull in Southern California.—On the 14th of April, 1907, I secured a female specimen of *Larus canus* on Alamitos Bay, Los Angeles County, California.

The gull was resting on the mud flat exposed by low tide; it was standing alone, about fifteen feet from a large flock of American Herring and Western Gulls and was quite easily approached by boat, altho the Herring and Western Gulls were noisily leaving the vicinity.

This is the only individual of this species that I have seen this season, altho I have spent almost the entire time on the Los Angeles County coast and adjacent islands, since January 1st.—C. B. LINTON, *Long Beach, California*.

Magnolia Warbler in Oregon.—Mr. William Warner of Salem, Oregon, says that in January one of his friends brought in a Magnolia Warbler (*Dendroica maculosa*) which was picked up dead in his front yard. He thought the bird had killed itself by flying against the window. The person who found the bird reported seeing a small band of these Warblers about the locality. I do not know of any other record of this bird in Oregon.—W. L. FINLEY, *Portland, Oregon*.

The Horned Grebe in Southern California.—On the morning of November 4, 1906, while rowing in San Diego Bay, near the Hotel Del Coronado, I heard a shot from a yacht nearby and noticed the yachtsmen put about and pick up a bird from the water, glance at it and throw it back.

I was immediately upon the scene and gathered in the specimen which proved to be a beautiful adult female Horned Grebe (*Colymbus auritus*).

There were several hundred American Eared Grebes in the bay, but I observed no other *C. auritus* during my four months stay in this locality. I have since taken a juvenile female *C. auritus* in Alamitos Bay, Los Angeles County, January 14, 1907.—C. B. LINTON, *Long Beach, California*.

A New Record for Colorado.—In "May or June, 1900", Mr. B. G. Voigt (deceased) shot a Prothonotary Warbler (*Protonotaria citrea*) between Palmer Lake and Monument, Colorado. In "May 1902", he shot two more specimens of the same species on the Arkansas River about 2 miles east of Pueblo, Colorado. I examined and identified these birds and while doing so was struck with the paleness of the bill, corresponding to the fall and winter plumage of this species. I thereupon sent one of the birds to Mr. Robert Ridgway, who writes that there is in the National Museum collections a specimen in this plumage which was taken as early as July 28, and who thinks that the dates, "May" and "June", as given to me, are certainly erroneous. I cannot vouch for these dates, nor is it possible now to confirm the note which Mr. Voigt gave me. This establishes another new species for Colorado.—A. H. FELGER, *Denver, Colorado*.

Mexican Black Hawk in California.—On the 26th of November, 1906, I secure ad male *Urubitinga anthracina* within the city limits of National City, San Diego County, California. The hawk was making a second attempt to capture a tame duck on the shore of a pond about twenty-five yards from the Wallace racing stables of this city, and was shot by one of the stable hands, I being present at the time.

This is the third of this species killed in this locality during 1905-06.—C. B. LINTON, *Long Beach, California*.

An Interesting Occurrence of the Canyon Wren.—On the 23rd of November, 1906, I took a Canyon Wren, *Catherpes mexicanus conspersus*, near Cheyenne Wells, Colorado. This is a prairie country about seventeen miles west of the Kansas line and hardly the place where one would expect to find this bird. The exact locality was near Smoky Creek, six miles north of the town. There is a small outcrop there of coarse sandstone and conglomerate, and it was about this that I found the bird. The weather was very cold and raw. Mr. C. E. Aiken considers it an unusual thing for the species to be so far out on the plains and thinks it must have been migrating. I know of no record for the bird so far east in Colorado.—EDWARD R. WARREN, *Colorado Springs, Colorado.*

A Bit Too Previous.—Spring fever, as it is commonly called, when a fellow just feels like breaking the traces and getting far away from the strenuous wear and tear of civilization, I believe comes with the first hint of spring to every nature lover who is closed up in an office.

It comes in many different forms. Sometimes it is a smell, sometimes a picture, or a look into the pages of an old field book. Or perhaps a day's trip thru the foothills will bring reminiscences of the freedom and serenity of getting far into the mountains away from the city's strife.

But here is an instance when spring came, as it seemed to me at the time, in midwinter. The 22nd of February being a holiday, I was looking over some bird skins in our log cabin at San Anselmo, when the familiar squeaky notes of a Hummer brought me to the door to see what might be doing. Everything was still, and seeing some Juncos close by, I imagined I heard them and not the Hummer, their notes being at times very much the same—especially when the Hummer is poised in the air at some flower uttering those sharp short notes. However I leaned against the door and waited. Back came the little green Anna with her mate. They dropped to the ground under a laurel, the male spreading out his gorgeous neck feathers and making quite a love scene with Anna. Finally like a shot he went his way, and she lost herself ten feet above the spot in the laurel. I walked over to the tree and after a diligent search discovered her sitting on a frail little nest about half built. She soon became restless at my gaze and left the nest, but soon came back with a large piece of cotton, tucking it under her breast with her bill and pulling it vigorously with her feet into place. Noting how roughly she bustled around in the nest, I was somewhat astonished when later in the day I peered into it and saw a set of eggs, one dark in incubation, and, as it proved, this must have been laid about the 12th of February.

I have never come across anything just like this in the nesting habits of birds, but the Hummers being early nesters and on account of the rains, I judge in this instance it was a case of sit close to save the nest and contents. Hence the one egg incubated and the other perfectly fresh.

Being the earliest date at which I have ever found a Hummer nesting, I feel safe in saying that San Anselmo has a record for early Hummers' nests, and at the same time the discovery has relieved me of the indescribable craving for spring.—H. H. SHELDON, *San Francisco, California.*

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

JOSEPH GRINNELL, Editor, - Pasadena.
H. T. CLIFTON, Business Manager, Box 404, Pasadena
WILLIAM L. FINLEY } Associate Editors
JOSEPH MAILLIARD }

Pasadena, California: Published June 15, 1907

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States, Mexico, and U. S. Colonies, payable in advance.

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other countries in the International Postal Union.

Claims for missing or imperfect numbers should be made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the Editor.

Advertising Rates on application.

EDITORIALS

In the vote to establish certain usages in our magazine, twenty-three Cooper Club members responded, with the following results:

By a vote of 18 to 5 we are *not* to use the metric system *exclusively* in THE CONDOR. We will use whichever system authors of articles prefer. A wise suggestion is that in technical accounts, the metric system be employed, but English equivalents given in parenthesis. No one would then be inconvenienced.

By a vote of 16 to 7 we are to continue to use the simplified spelling in its authoritatively recommended moderation.

By a vote of 12 to 11 we are hereafter to begin with capitals all vernacular names of birds in the body of sentences, as well as in lists. This is the only change from our previous custom. Mr. Dawson's presentation of this subject in our last issue, leaves us convinced of the correctness of his views, and we are now glad the vote decided the matter in that way.

We want to make THE CONDOR an attractive magazine in general typographical make-up, as well as from a scientific and popular standpoint, and to that end we will welcome relevant suggestions from anyone.

The present editor is sorry he cannot see his way to adding a juvenile or school department to this magazine as has been urged from several directions on this coast. We really do not see the expediency of such a move. *Bird-Lore* is filling the educational field admirably; why should we compete with it? And, too, we do not believe it would meet the approval of

anywhere near a majority of Cooper Club members.

It has been our conviction that we should conduct a medium for the publication of serious ornithology, not necessarily technical, however. We believe nothing at all should be published anywhere, that is so obscurely couched as to be incomprehensible to the average reader. The most important fact and profound philosophy *should* be stated "popularly," in the sense of being clearly worded, with an elimination of unusual terms.

On the other hand we abhor that style of article in which one must search for the germ of information within a frothy mass of inconsequential chatter, as is the characteristic of so much of our "Nature" literature nowadays. We do not believe our mission to be to furnish "light reading" for people who are not interested enough to care for real bird-study.

The Washington Audubon Society was organized at Seattle, the 20th of April, with W. Leon Dawson as President, and H. Rief as Secretary.

Contrary to our contention in our last November issue that the "House Finch" is universally called "Linnet," Mr. E. R. Warren tells us that in Colorado 99 out of every 100 persons familiar with "House Finches" never heard of "Linnets"! However, we feel quite sure that the latter name prevails over the largest part of the bird's range.

Walter P. Taylor is spending the summer in natural history field-work along the Colorado River near Searchlight.

COMMUNICATIONS

BAIRD'S OR BAIRD?

Editors of THE CONDOR:

It will be small compliment to the reader, I fear, if I confess in advance that I have not freshly reviewed the discussion upon the mooted point of the possessive or adjectival form of bird names. But perhaps I shall succeed in stating the case freshly, if for no other reason than that no account has been taken of the excellent matter already published.

The trouble is that contention has been made for the use of pronominal adjective *or* possessive, whereas, in truth, both have proper uses. And this failure to grasp the validity of both forms is due chiefly to a failure in distinguishing between a bird as an individual and a bird as a species or a member of a species.

Take for example *Centronyx bairdii* (Aud.), called since its dedication in 1843 Baird's Sparrow. Now the contention is made that Spencer F. Baird—quite apart from the fact that he is dead—had no possessive right in certain sparrows flocking and summering in Dakota, and that, therefore, it is incorrect to speak of

Baird's Sparrow. Regarding these birds as individuals, he had not; but regarded collectively as a species, he had a clear right. The proprietor of the bird as a species was Audubon. He discovered certain sparrows and formed therefrom the concept of a new species, which he presented to the world. It is his as truly as a certain invention is Edison's or a certain proposition in geometry is Euclid's. Audubon delegated, or dedicated, this proprietary right to the species as a scientific concept, to Baird. Henceforth it became the species whose publication was indissolubly connected with the name and honor of Spencer F. Baird. It, *the species*, became *Baird's Sparrow*, in much the same sense that our national capitol is Washington's city.

Baird's Sparrow as a species enjoys such and such a distribution. *Baird's Sparrow occurs in Dakota*—that is to say, the species named in honor of Baird is exemplified in that state. I have no thought of any individual or set of individuals when I make that statement. I violate no principles of grammar, nor do I shock any sense of propriety. It is a correct use.

When we come to the individual we must drop the possessive form. The sparrows as creatures of flesh and feathers belong to all of us (that is to say, the State) and a given example would become Mr. Grinnell's if he got his gun up first. It is as absurd to speak of a Baird's Sparrow as it would be to call a man who hailed from the national capitol a Washington's man. The sparrow is a Baird Sparrow. If he sits on a mullein stalk he is *the* Baird Sparrow who sits on a mullein stalk.

By every analogy, also, it is proper to employ the pronominal form in speaking of the species. The Baird Sparrow is found in meadows. The Washington man is interested in politics—that is, the type, the species, is so interested.

Take an example from a different class to show the interchangeability of terms: The telephone is Edison's invention. This (invention) is Edison's telephone. Here the concept or generic idea is prominent. The Edison Telephone is a great invention—the concept idea is still uppermost; but the pronominal form is perfectly suitable. Now turn to an individual instrument: "This is an Edison telephone", but never "This is an Edison's telephone."

To conclude: In vernacular names of birds either the possessive or pronominal form is correct when the name refers to the bird as a species, or when the conceptual idea is prominent. Only the pronominal form is allowable when the name refers to an individual, or where the idea of individuality is prominent.

Do not these conclusions commend themselves to readers of THE CONDOR? And may

we not have an end of this see-sawing between East and West by recognizing that *both* are right when properly discriminated?

Respectfully yours,

W. LEON DAWSON.

Seattle, April 11, 1907.

NESTING WAYS

Editor THE CONDOR:

Let me, thru your columns, thank most heartily the four or five observers that have given me such royal help in the matter of nesting data. Perhaps other generous-hearted members of the Cooper Club will be on the look-out, during the coming season, for data covering the following (and the following only): Mendocino Song Sparrow, Salt Marsh Yellow-throat, N. W. Bewick Wren, Barlow Chickadee, Big Tree Thrush, Pac. Night Hawk, North. Spotted Owl, N. W. Saw-whet Owl, Gray Jay, Vera Cruz Red-wing, Large-billed Sparrow, and Cal. Sage Sparrow.

Kind words continue to come in, concerning "Nesting Ways", from perfect strangers. The spirit shown by such persons makes one deeply desirous of making the work as comprehensive and as complete as present knowledge can possibly make it. Since I shall always feel that THE CONDOR has been a strong element in making this manual complete and potentially successful I venture, thru its columns, to give the interested bird public a fore-taste of some of the pictorial promise afforded in the pages of "Nesting Ways":

Nesting Sites of Hooded Merganser, Yellow Rail, Wilson Phalarope, Long-billed Curlew, Belted Piping Plover, Columbian Sharp-tailed Grouse, Sage Grouse, Turkey Vulture, Prairie Falcon, Saw-whet Owl, Western Horned Owl (in the rocks), Arctic Three-toed Woodpecker, Wright Flycatcher, Canada Jay, Bendire Cross-bill, Leconte Sparrow, Arctic Towhee, Plumbeous Vireo, Alma Thrush, and many of the commoner birds. Of rare or curious nesting conditions portrayed, examples are listed: A three-foot-long nest of the Say Phoebe; beautiful nest-sites of the White-winged Junco, showing the fourth and fifth nests known to science; site and nest of the only known instance of the breeding of the Lincoln Sparrow in Minnesota; a most beautiful suite illustrating the nesting habits of the Rock Wren; photograph showing an undescribed nesting habit of the Sage Thrasher; and a most interesting series of half-tones illustrating a hitherto unknown nesting location of the Rocky Mountain Nuthatch. One of these exhibits the portraits of both of a pair of birds, the male being in the act of coaxing his mate to enter the nest, at a point but four feet from the photographer.

P. B. PEABODY.

Blue Rapids, Kansas; Feb. 11, 1907.

PUBLICATIONS REVIEWED

A whole book devoted to a single species of bird is a novelty. The idea might not prove a success in very many cases; but it certainly does in the present instance. Readable throughout is MERSHON'S *THE PASSENGER PIGEON*¹. Even of absorbing interest are the historical accounts of the vast flights and nestings of the bird. The author's own boyhood experiences are incorporated and there is some other previously unpublished material. But the book is avowedly, and of necessity, a compilation. In the one volume we find brought together practically all that has been recorded concerning the Passenger Pigeon.

It was soon after the year 1880 that the species, existing previously in millions, largely disappeared; and since 1886 has it only occasionally been noted. A few evidently still inhabit the states of Illinois, Michigan and Wisconsin; and a "large flock" is said to have been seen in Greene County, New York, in April, 1906.

"Many theories have been advanced to account for the disappearance of the wild pigeons, among them that their migration may have been overwhelmed by some cyclonic disturbance of the atmosphere which destroyed their myriads at one blow. The big 'nesting' of 1878 in Michigan was undoubtedly the last large migration, but the pigeons continued to nest in Michigan and the North for several years after that * * *. Therefore the pigeons did not become extinct in a day * * *. The cutting off of the forests and food supply interfered with their plan of existence and drove them into new localities, and the ever increasing slaughter could not help but lessen their once vast numbers."

If space permitted we could quote selected pages of interesting accounts of habits, food, methods of netting, shooting and marketing; but we must only refer our readers to the book itself. An attractive feature are the colored plates of the Passenger Pigeon by Fuertes, and of the Band-tailed Pigeon by Brooks. All records of the Passenger Pigeon from the Rocky Mountains westward doubtless refer to the Band-tailed Pigeon.—J. G.

An ingenious and doubtless useful adjunct for the aid of the amateur is GERBERDING'S *BIRD NOTE BOOK* ². It is of the separate-leaf style, with fillers of several sorts. One of

these, by means of what look like short-hand symbols, serves for the record of previously unidentified species. Another serves for the recording of subsequent field notes.—J. G.

THE WARBLERS OF NORTH AMERICA, by FRANK M. CHAPMAN³, impresses us as a worthy undertaking well carried out. It seems to be above criticism from a technical standpoint, and indeed its author is sufficient guarantee of its accuracy. In this respect it is a refreshingly trustworthy book as compared with many other popular works by less experienced ornithologists.

There are no keys, but these are unnecessary in view of the beautiful and accurate colored plates. The chief distinguishing characters are concisely stated for each species and subspecies in their various plumages.

While the migration data and illustrations have previously appeared in *Bird-Lore*, much of the biographical matter is wholly new. A large number of observers have contributed to the fund of information set forth, and this cooperative feature has in this instance proven very successful. Many of the MS-quoted sketches of our western birds are from the pen of Dr. W. K. Fisher, and a good deal is quoted from various other authors as originally recorded in *THE CONDOR*.

Mr. Chapman's general discussions of the Distribution of Warblers, Migration of Warblers, and Mortality Among Warblers are well-considered and instructive. To one statement, however, we would take exception: "The death-rate among North American Warblers is doubtless higher than that which prevails in any other family of American birds." It is generally accepted as an axiom that the yearly death-rate equals the birth-rate (that is, on an average among all birds, for some species may be increasing in numbers from year to year while others are decreasing). As the Warblers lay 4 or 5 eggs per year on an average, probably nearer the first number, certainly their death-rate cannot be as great as that of the Titmouse Family (*Paridae*) in which 6 eggs are deposited, or the Wren Family (*Troglodytidae*) with 6 or 7. And how about the Kinglets, Ducks, Pheasants, Grouse and Quail!

The plan of *THE WARBLERS OF NORTH AMERICA* is logical, and the whole treatment satisfying. The present reviewer can heartily recommend the volume to amateur and advanced student alike.—J. G.

¹ *The Passenger Pigeon* | By | W. B. Merston | [Vignette] | New York | The Outing Publishing Company | 1907 (our copy received May 8)—pages i-xii, 1-225, 9 full-page plates, 3 in color.

² *Bird Note Book*, for use in Identification of Wild Birds as seen in their native haunts. Devised and Published by Richard H. Gerberding, 1319 Waveland Ave., Chicago, Ill. 1906.

³ *The Warblers of North America* | by | Frank M. Chapman | with the cooperation of other ornithologists | with twenty-four full-page colored plates, illustrating every species, from drawings by Louis Agassiz Fuertes | and Bruce Horsfall, and half-tones | of nests and eggs | [Vignette] | New York | D. Appleton & Company | 1907 [Received April 5]—pages i-x, 1-306, plates I-XXIV (colored), 12 half-tones.

In December last, appeared the concluding number of *THE WARBLER*, published and edited by MR. JOHN LEWIS CHILDS at Floral Park, New York. It had been hoped that increasing support would have warranted the continuance of this magazine indefinitely. But unfortunately, as announced by its Editor in the last issue, subscriptions had amounted to less than ten per cent of the cost of maintaining the magazine. This is, of course, deplorable. But the same has been true of most other bird periodicals, and the few that persist owe their support to other means than that afforded by subscriptions alone.

The features of *THE WARBLER*, as originally intended, were the publication of strictly original matter pertaining to the rarer North American birds, and, to accompany these, colored plates of previously unfigured nests and eggs. These features are commendably maintained thruout the two complete volumes of the magazine which appeared. In spite of its having lived so brief a time, the two volumes are sure to become in greater and greater demand wherever ornithological libraries are forming. No student can overlook the records and descriptions therein contained.

THE WARBLER ("Second Series," tho the first series seems to have been so unimportant as to have attracted little attention) ran thru 1905 and 1906, a volume to each year, and four numbers to each volume. Its appearance was somewhat irregular, tho it generally came out in March, June, September and December of each year. Volume I contained 128 pages, 8 colored plates, and 32 half-tone illustrations. Volume II contained 108 pages, 4 colored plates and 13 half-tone illustrations.

It is the purpose of the present reviewer to call attention only to the strictly Western material which found record in this periodical. In Number 1 of Volume I appears a colored plate of three eggs of the Olive Warbler (*Dendroica olivacea*) collected by O. W. Howard in the Huachuca Mountains of Arizona. The plate is accompanied by brief notes (unsigned, so probably editorial). In the same issue is a brief account by H. R. Taylor of the Alameda Song Sparrow (*Melospiza cinerea pusillula*). In Number 2 of Volume I, John Lewis Childs contributes some "California Notes," which deal with the Golden Eagle (nesting in San Diego County, California), Western Gull, Anna Hummingbird, California Partridge, Snow Goose, and English Sparrow. In Number 3 of Volume I, P. B. Peabody writes of "The Tolmie Warbler in Wyoming," illustrated with a halftone of a nest and eggs. In the same issue appears a colored plate of three eggs of the Rufous-crowned Sparrow (*Aimophila ruficeps*), accompanied by a brief editorial note. This is the set taken by Bar-

low and discribed by him in *THE CONDOR*, Volume IV, pages 107-111. In Number 4 of Volume I of *THE WARBLER* is a colored illustration of an egg of the Clarke Nutcracker, taken by H. C. Johnson in Utah. Short (editorial) notes are appended. In the same number P. B. Peabody describes the habits of "The Long-tailed Chickadee" as observed by him in Wyoming. Two half-tones show a nesting site and nest. There also appears in this issue a half-tone photograph of a nest and eggs of the Western Gull, taken by O. W. Howard on Santa Barbara Island.

Number 1 of Volume II opens with a colored plate in part showing four eggs of the Dusky Warbler (*Helminthophila celata sordida*) on San Clemente Island. An account of the taking of these is given by the collector, O. W. Howard. An interesting fact discovered is that this race nests high from the ground in bushes or small trees and not, as with its relatives, on the ground. In the same issue P. B. Peabody describes at length the nesting of "The Desert Horned Lark" in Wyoming, with three half-tone illustrations; and Harry H. Dunn tells about "The California Bush-Tit." In Number 2 of Volume II the frontispiece colored plate illustrates two sets of four eggs each. One is of the "Santa Barbara Flycatcher (*Empidonax insulicola*)" taken by O. W. Howard on Santa Catalina Island, with a brief explanatory note. It will, however, be remembered that we hold that there is no form on the Islands distinct from the ordinary Western Flycatcher of the mainland. The other illustration is of the eggs of the Gray Flycatcher taken in the San Bernardino Mountains of southern California. Accompanying this is an extended article by Joseph Grinnell on the "Nesting of the Gray Flycatcher in California," accompanied by a half-tone picture of a nest. In the plate caption the scientific name of this species is given as "*Empidonax griseus canescens*," an impossible combination, introduced thru error, as later acknowledged by the Editor. The correct name, as we have lately been informed, is not even *E. canescens*, but *Empidonax griseus* Brewster. In the same number P. B. Peabody discusses at length the "Pinyon Jay" from his experiences with the bird in Wyoming; 3 half-tones lend vividness to the account. In Number 3 of Volume II, the eggs of the Salt Marsh Yellowthroat (*Geothlypis trichas sinuosa*) are illustrated in color, from a set taken by H. R. Taylor. P. B. Peabody tells about the "Rocky Mountain Nuthatch" in Wyoming, presenting four half-tones of birds and nesting sites. And Harry H. Dunn gives a brief account of "The Gnatcatchers of Southern California." The only plate in Number 4 of Volume II shows in color the nest and eggs of the Blue-throated Hum-

mingbird (*Cæligena clemenciæ*) taken by the late George F. Breninger in the Huachuca Mountains of Arizona. The Number and the Volume close with a complete catalog of the Ornithological Collection of Mr. John Lewis Childs, in which Western birds and eggs are especially well represented. In fact there are extremely few species lacking.—J. G.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MAY.—An open meeting of the Northern Division of the Cooper Ornithological Club was held in Linderman Hall, in Alameda, Cal., on May 11, 1907, and a very interesting program was presented to a large assemblage of members and visitors.

Mayor E. K. Taylor of Alameda gave a short address, welcoming the Club to Alameda and encouraging them in their work. He emphasized the need of educating the people to understand the economic importance of birds and cited the case of the recent bird-bill, which was defeated several times and then passed with a large majority, due not only to the efforts of those interested, but also to the growing intelligence of the people.

Mr. C. A. Vogelsang of the State Fish and Game Commission then addressed the meeting and related some of the difficulties attending his work. He further said, that if the Cooper Club, the Audubon Society, and the Game Commission would get together, he believed that any good bird-law could be gotten thru the legislature.

J. S. Hunter then gave a very interesting talk concerning the recent explorations of the California Academy of Sciences Expedition to the Galapagos, of which he was a member. He spoke of the peoples and their customs, the physical features of the islands, and of the birds. He believes that many of the land birds of the Galapagos group of islands, represent species in process of formation, because of the many intermediates still remaining between the widely different types. This expedition was very successful and Mr. Hunter was able to relate but few of the interesting facts discovered by it, in the short time allotted to him.

After the program there was a short business session. B. R. Bales of Circleville, Ohio, and Jesse C. A. Meeker of Danbury, Conn., were proposed for membership. The following were elected to active membership: W. F. McAtee, Biol. Surv., Wash. D. C.; John F. Ferry, Field Museum, Chicago, Ill.; A. O. Treganza, 62 Hooper Bldg., Salt Lake City, Utah; Dr. and Mrs. Clark Burnham, 2335 War-

ring Street, Berkeley, Cal. The resignation of R. E. Snodgrass was held over until the next meeting. H. O. Jenkins then resigned from the office of Secretary owing to his expected absence from the center of Club meetings, and R. S. Wheeler of 1417 Grand Street, Alameda, Cal., was appointed by the President to act as Secretary until the annual election of officers in January. Meeting adjourned.

H. O. JENKINS, *Secretary*.

SOUTHERN DIVISION

MARCH.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was called to order by Vice-President Willett, in the office of H. J. Lelande in the City Hall, Los Angeles, Cal., March 28, 1907, with members Lelande, Robertson, Wicks, Dixon, Antonin and Alphonse Jay, Linton and Law present, and Mr. Howard S. Reed, of Santa Fe, N. M., as visitor.

The minutes of the last meeting, Feb. 28, 1907, were read and approved. On motion by Mr. Robertson, seconded by Mr. Lelande, and duly carried, Mr. W. L. McAtee of Washington, D. C. was elected to active membership in the Club, subject to the approval of the Club-at-Large.

On motion by Mr. Robertson, seconded by Mr. Dixon, and duly carried, the Secretary was instructed to take up the matter of Club land with Mr. Will Judson, and get a definite report and proposition in writing in regard to terms of acquiring a Club reserve.

A paper on the Pallid Wren-Tit, by Wright M. Pierce was read. It described the experiences of the writer in and about Claremont, Cal., with this little bird and its nesting.

Mr. Reed brought up the subject of a Public Museum in Los Angeles, and a long discussion of ways, etc. was indulged in. Mr. Reed urges strongly active efforts to establish one. Adjourned. J. EUGENE LAW, *Secretary*.

APRIL.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was called to order by President Morcom, at 4 o'clock P. M., April 28, 1907, on the west veranda of his suburban home, 1815 N. Raymond Ave., Pasadena, Cal. This proved a most appropriate spot for a club meeting, surrounded as this home is by every kind of shrub and tree that make a southern California home attractive, with bird life never more abundant. The members fortunate enough to be a part of this glorious afternoon were Miss Tarbell, Messrs. Grinnell, Clifton, Robertson, Rising, Miller, Chambers, Antonin and Alphonse Jay, Cosper, Watson, Taylor, Chamberlain and Law, and Miss Parker visiting.

Quite as important as the meeting itself, however, at least in the eyes of those present,

was the hour before the meeting was called spent about the grounds under the leadership of Mr. Morcom. Every tree and bush here has its own reason for being, and no two have the same reason, and Mr. Morcom has all these reasons at his tongue's end. But these reasons appealed to us particularly because there was always a bird reason, and usually a bird present. Birds are princes here. Fed three times a day and never disturbed or frightened, they all know where the "dining room" is, and always have an eye open in that direction. Mr. Morcom will be expected some day to tell the CONDOR readers some of the "table gossip" of this happy family. While we were near, a beautiful hooded oriole calmly took possession, much to the disgust of several houses finches, of a partly opened orange which lay on the ground. Leisurely he dipped his bill into the sweets, drank his fill, then sat quietly on the rim, while the finches scolded. Every bird in its season pays its respects at this spread.

The meeting opened with reading of the minutes of the last meeting, March 28, 1907, which were duly approved.

Mr. Grinnell read another paper on system

and simplicity in our nomenclature, with particular reference to the new Check-List, calling attention to the complexity and limitless changing that will be the result of a too rigid adherence to the law of priority in names. After all why not adopt a simple up-to-date system of names, based on current usage?

A very comprehensive paper on the life habits of the Woodhouse Jay in the vicinity of Denver, Colorado, was read by the Secretary in the absence of the author, Mr. Robert B. Rockwell. An exhaustive paper by Prof. Wm. E. Ritter of Berkeley, Cal., on "Ornithology for a Student of Evolutionary Problems" was read by Mr. Grinnell.

That the birds about Mr. Morcom's home fare well, no one doubts who was part of this meeting which now adjourned to the dining room. A bounteous supper was spread, about which the club lingered, eating, and talking bird lore till long after dark, breaking up only when the long distances home compelled the members to leave. Before going, however, an enthusiastic standing vote of thanks was tendered Mr. Morcom. Adjourned.

J. EUGENE LAW, *Secretary*.



W. Chamberlain	J. E. Law	W. L. Chambers	H. Robertson	H. G. Rising
W. P. Taylor	Alphonse Jay	J. Grinnell	L. H. Miller	M. M. Watson
C. E. Cosper	G. F. Morcom	Miss O. S. Tarbell	Miss Parker	Antonia Jay

SOUTHERN DIVISION COOPER CLUB MEETING AT MR. MORCOM'S

RESIDENCE, PASADENA, APRIL 28, 1907

Photographed by Mrs. Howard Robertson

Directory of Members of the Cooper Ornithological Club

Revised to June 1, 1907

(Residence in California unless otherwise stated. Year following name signifies date of election.)

HONORARY MEMBERS

Belding, Lyman, Stockton. 1896.
Ridgway, Robert, 3413 13th St., N. E., Brookland, D. C. 1905.

ACTIVE MEMBERS

Adams, Ernest, Clipper Gap, Placer Co. 1896.
Anderson, Malcolm P., care of American Consul General, Yokohama, Japan. 1901.
Applegarth, Miss May S., Haywards. 1905.
Appleton, J. S., Simi, Ventura County. 1901.
Arnold, Dr. Ralph, U. S. Geological Survey, Washington, D. C. 1893.
Atkinson, Wm. L., 28 E. Santa Clara St., San Jose. 1899.
Bade, Wm. F., 2616 College Ave., Berkeley. 1903.
Bailey, Henry F., 94 Pacific Ave., Santa Cruz. 1902.
Bailey, H. H., 321 54th St., Newport News, Va. 1903.
Bailey, Vernon, Dept. Agriculture, Washington, D. C. 1904.
Bales, Dr. B. R., Circleville, Ohio. 1907.
Bay, J. C., Stella, Shasta Co. 1903.
Beal, Prof. F. E. L., Dept. Agriculture, Washington, D. C. 1903.
Beck, Rollo H., Berryessa. 1894.
Bishop, Dr. Louis B., 356 Orange St., New Haven, Conn. 1904.
Bohlman, Herman T., 46 N. 9th St., Portland, Ore. 1903.
Bolander, Louis P., Jr., 432 Fair Oaks St., San Francisco. 1907.
Bolton, A. L., 1700 Bonte Ave., Berkeley. 1897.
Boring, Miss Ora, 605 N. San Joaquin St., Stockton. 1901.
Bowles, C. W., 401 So. G St., Tacoma, Wash. 1903.
Bowles, J. H., 401 So. G St., Tacoma, Wash. 1903.
Bretherton, Cyril H., 621 Bryson Block, Los Angeles. 1907.
Brewster, William, 145 Brattle St., Cambridge, Mass. 1904.
Brooks, Allan, Okanogan Landing, Br. Columbia. 1906.
Brown, Herbert, P. O. Box 6, Tucson, Arizona. 1903.
Bryan, Wm. Alanson, Bishop Museum, Honolulu, H. T. 1905.
Burnham, Dr. Clark, 2335 Warring St., Berkeley. 1907.
Burnham, Mrs. Clark, 2335 Warring St., Berkeley. 1907.
Carpenter, Nelson, Box 74, Stanford University. 1901.
Carriger, Henry W., 243 Pierce St., San Francisco. 1895.
Chamberlain, Willard, 226 So. Bunker Hill St., Los Angeles. 1906.

Chamberlin, Corydon. (No address at present). 1893.
Chamberlin, Geo. D. (No address at present). 1893.
Chambers, W. Lee, Santa Monica. 1897.
Chapman, Miss Bertha L., 404 Walsworth Ave., Oakland. 1901.
Chapman, Frank M., Amer. Museum Natural History, Central Park, New York City. 1903.
Childs, John Lewis, Floral Park, N. Y. 1904.
Clark, Ulysses S., San Jose. 1894.
Clemens, Rev. Joseph, Chaplain 15th Inf., Manila, P. I. 1903.
Clifton, H. T., P. O. Box 404, Pasadena. 1904.
Coale, Henry K., Highland Park, Ill. 1906.
Cohen, Donald A., Alameda. 1894.
Colburn, A. E., 1204 So. Main St., Los Angeles. 1905.
Cooper, Jas. S., Haywards. 1903.
Cosper, Chas. E., So. Pasadena. 1906.
Cummings, Claude, Pinole, Contra Costa Co. 1897.
Currier, Ed. S., P. O. Drawer 21, St. Johns, Multnomah Co., Oregon. 1904.
Daggett, Frank S., 441 Postal Telegraph Bldg., Chicago, Ill. 1895.
Davis, Evan, Orange. 1894.
Dawson, W. Leon, 5528 15th Ave., University Sta., Seattle, Wash. 1906.
Dean, W. F., Milo. 1901.
Deane, Ruthven, 504 N. State St., Chicago, Ill. 1904.
Deane, Walter, 29 Brewster St., Cambridge, Mass. 1904.
D'Evelyn, Dr. F. W., 2103 Clinton Ave., Alameda. 1905.
Dille, Fred M., 2927 W. 28th Ave., Denver, Colo. 1903.
Dixon, Joseph, Escondido. 1904.
Donnell, W. B., 101 S. Euclid Ave., Pasadena. 1905.
Donnelly, Miss M. G., Vernal Ave., Piedmont. 1905.
Duprey, Henry F., 919 Morgan St., Santa Rosa. 1906.
Dutcher, William, 525 Manhattan Ave., New York City. 1905.
Dwight, Dr. Jonathan, Jr., 134 W. 71st St., New York City. 1904.
Eastman, F. B., Lieut. 10th Inf., Fort Egbert, Eagle, Alaska. 1904.
Emerson, W. Otto, Haywards. 1894.
Fair, Paul J., Box 338, Palo Alto. 1905.
Ferry, John F., care of Field Museum, Chicago, Ill. 1907.
Finley, Wm. L., 264 Madison St., Portland, Ore. 1900.
Fisher, Dr. A. K., Dept. Agriculture, Washington, D. C. 1904.
Fisher, Dr. Walter K., Box 77, Palo Alto. 1900.
Flanagan, John H., 392 Benefit St., Providence, R. I. 1904.
Forrester, Miss G. B. (Address unknown). 1903.
Fowler, Fred H., 221 Kingsley Ave., Palo Alto. 1901.
Franklin, Burnell, 1008 So. Fair Oaks Ave., So. Pasadena. 1901.

- Fuertes, Louis Agassiz, Cornell Heights, Ithaca, N. Y. 1904.
- Gallaher, William, 2550 Ellsworth St., Berkeley. 1905.
- Gane, Henry Stewart, Santa Barbara. 1903.
- Gault, Benj. T., Glen Ellyn, Du Page Co., Ill. 1905.
- Gay, Harold S., Craftonville. 1898.
- Gifford, Edw. W., 3256 Briggs Ave., Alameda. 1904.
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THE CONDOR

A Magazine of Western
Ornithology



Volume IX

September-October, 1907

Number 5



COOPER ORNITHOLOGICAL CLUB

Smithsonian Institution

SEP 30 1907


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Entered as second-class matter May 1906 at the post office at Pasadena, California.
under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, 576 North Marengo Ave., Pasadena, Cal.

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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume IX

September-October 1907

Number 5

TWO STUDIES IN BLUE

BY WILLIAM L. FINLEY

PHOTOGRAPHS BY HERMAN T. BOHLMAN

BLUE is not a common color among our birds. There are many more clad in neutral tints of brown and gray than in bright blue. But a list of birds could not be complete without our two commonest studies in blue, the blue-bird and the blue jay.¹ In all our woods from the Atlantic to the Pacific, one may find these two, one gentle and friendly, the other bold, boisterous and untrusting.

A small flock of jays are such a noisy pack in the autumn. They squawk thru the woods as if they wanted everybody to know just where they were; but in the spring after they have paired and are nesting, they suddenly go speechless as if they couldn't trust themselves to talk out loud. And indeed they can't when anywhere about the nest. They talk in whispers and flit as silently as shadows thru the trees.

In the early spring I heard the jays squawking about the maples on the hill, but I knew they would not nest there; that was only a play ground. A quarter of a mile below this was a thick clump of fir saplings. They would take this thicket for a home. The last week in May I searched thru this and found the nest eight feet from the ground among the close limbs.

A little earlier these same birds were blustering, bragging and full of noise. When I found the nest, one of the birds was at home. She didn't move till I shook the tree; then she slid off silently and went for her mate. In another minute they were both there, not threatening and swearing as I had expected. It was pitiful to see how meek and confiding they had become. There was not a single harsh word. They had lost even the blue jay tongue and talked like two chippies in love. They had a peculiar little note like the mewling of a pussy-cat. I felt ashamed to touch the home of such a gentle pair. If this was not a two-fold bird

¹ This article refers to the Western Bluebird (*Sialia mexicana occidentalis*), the California Jay (*Aphelocoma californica*), and the Steller Jay (*Cyanocitta stelleri*), as observed in Oregon.



NEARLY FULL-FLEDGED CALIFORNIA JAY ABOUT TO LEAVE HOME

character, I never expect to see one. They go sneaking thru the woods, stealing eggs and wrecking homes of others, and squealing in delight at every chance to pillage—but this is legitimate in the blue jay code of morals. I have often wondered whether jays plunder other jays, or whether there is honor among bird thieves. Are there robber barons among birds as among men? But doves could not be more gentle and loving about the home, for the jays were devoted parents.

If this pair of jays carried on their nest robbing, they did it on the quiet away from home, for in the thicket and only a few yards away I found a robin's nest with eggs, and the nest of a thrush with young birds. Perhaps the jays wanted to



NEST AND EGGS OF THE STELLER JAY IN FIR TREE

stand well with their neighbors and live in peace. I am sure if the robins had thought the jays were up to mischief, they would have hustled them out of the thicket. I think we give both the crow and the jay more blame for nest robbing than they deserve; for investigation shows that they eat many insects, and in some cases I have known the jays to live largely on wheat and other grains.

Thruout the East the bluebird is known as the forerunner of spring. The bluebirds are the first to return and they bring the spring with them. But in the West where the winters are not so cold, a few always stay the year around. They fly together in small flocks during the day and sleep together at night. One even-

ing I saw four huddled in one of my bird-boxes. During the hard days of rain and snow they were continually together and returned at night to stay in the box. I think they were partly drawn to return each day by the food I put out. When I first saw them in the back yard, I tossed a worm out of the window and it had hardly struck the ground when it was snapped up. They ate half a cupful of worms.

The bluebird, the wren and the swallow have taken remarkably to civilization.



A MOSS-COVERED BIRD-BOX IN THE ORCHARD, OCCUPIED BY BLUEBIRDS SINCE 1897; OVER 110 YOUNG HAVE BEEN HATCHED HERE

They formerly built in holes in old trees in the midst of the woods, but now they prefer a house in the back yard. In one locality near my home we used to find the bluebirds nesting every year in some old stumps. Now several residences have been built nearby and in three of the yards there are bird-boxes, and the bluebirds have abandoned the stumps and taken to modern homes. A bluebird has better protection in a back yard and he knows it. Then if the owners like him, he grows fond enough of them to perch on the hand, and he pays rent in the quality of his song and by ridding trees of harmful worms.

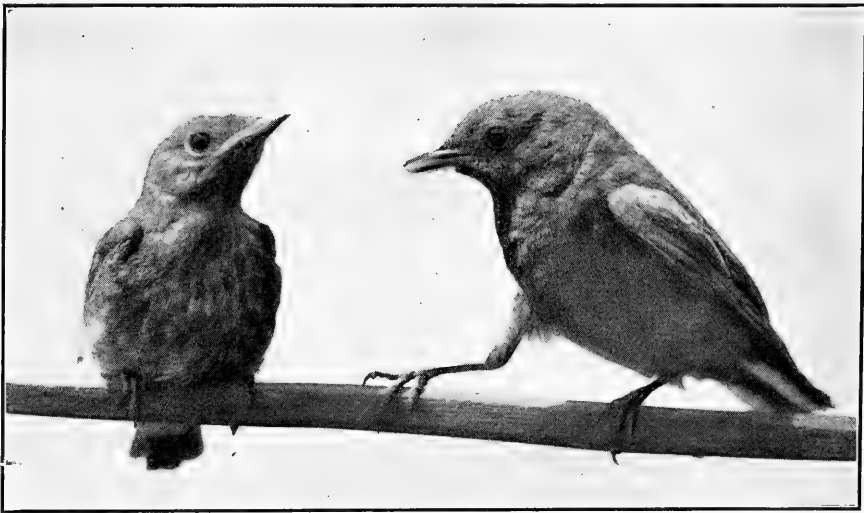
Altho the bluebird often lives about the city, I associate him with country life. I imagine he likes a farm home better than a city flat. I have a friend in the country who has bird-boxes up in various places about his farm. Most of them find occupants every year. An old square box that is set in the crotch of an apple tree is ahead in the record. This box was put up in the spring of 1897 and was taken by a pair of bluebirds. It is only four feet from the ground and has a removable

top so that the owner may readily make friends with the tenants. When I opened the box and looked in, the mother sat quietly on her eggs and was tame enough to allow us to stroke her feathers.

The box is now covered with moss and lichens, but it is famous in bluebird history. It has been occupied every year since it was put up, and not a single

year has there been less than two broods reared and several times three. The record year was in 1904 when the bluebirds had two families of seven and one of five birds, and succeeded in raising them all. Seven is a large family for bluebirds and it is more remarkable that there should have been seven in the second brood and then a third brood. In the eight years there have been over one hundred and ten young bluebirds hatched in this box in the apple tree. One would think the bird world would soon be overcrowded with bluebirds about the farm. There seem to be no more bluebirds there than eight years ago, altho there are generally two or three other broods raised in other boxes nearby. It all goes to show how the bird population decreases in numbers. The new birds of each year take the place of the numbers that die during the winter. Birds have so many enemies that we know not of. Many die of disease, many starve or die of cold, and many are killed by birds of prey and animals that hunt small birds.

It would be interesting to know whether the same pair returns each year to the box in the tree, or how many different pairs have lived there. Sometimes the same



PARENT BLUEBIRD JUST DRAWING BACK AFTER PLACING FOOD IN YOUNG BIRD'S MOUTH

pair have returned, but it is improbable that they have lived longer than three or four years. If one of the birds died, the other may have taken another mate and returned to the same home.

In the side of our tank-house we bored two holes about four feet apart and nailed up boxes on the inside. One of these was soon taken by a bluebird. The female went in and looked the box thru and in a moment came out and perched on the wire while the male took a look. The next day the female began carrying straws. She had a devoted husband, but he was merely an attendant when it came to work. He watched and applauded, but he didn't help build. I don't know but that he was too lazy; or maybe he didn't know whether his wife wanted him bothering while she was building to suit herself. It looked to me as if he were ornamental without being useful. But after watching awhile, it seemed that it was her duty to build and his to watch and encourage. When she carried in the material and fixed it, she popped out of the hole and waited while he went in to

look, and then out he would come with words of praise and away they would fly together.

I had a splendid arrangement to watch the builders at close quarters. I could go in the tank-house and close the door and then in the darkness I could look thru a crack in the box, and with my eyes less than a foot away, could watch every movement the birds made. While the mother was sitting on the eggs, she became very tame and we often reached in and stroked her feathers.

When the young birds came, I watched the mother come to feed and brood her young. The father was the ever-watchful admirer, but the mother was all business and paid no attention to him

except to knock him out of the way when he was too devoted. The mother always brought in the food, and the father kept staying away more and more until the young birds were grown.

One day while I was watching, the mother was feeding the youngsters on maggots almost entirely. She would be gone quite a while, but each time would return with a large mouthful which she fed to the young. Occasionally one of the young failed to get all of them and if one dropped, the mother picked it up and ate it herself.

One of the eggs was addled and did not hatch, but the mother was very fond of it. She would look at it almost every time she returned and would turn it over and then hover it a few moments as if she were sure it contained a baby bird.

The nest was lined with horse-hair and once when the mother fed one of the chicks, the food caught and the little bird swallowed the hair too, but both ends stuck out of his mouth. He kept shaking his head, but could not get rid of it. I waited to see if



WESTERN BLUEBIRD ABOUT TO ENTER HOLE IN
SIDE OF TANK-HOUSE, WITH FOOD FOR YOUNG

the mother would assist him, but she didn't seem to notice his trouble, so I had to reach in and dislodge the hair. Otherwise I am afraid it would have fared hard with the chick.

These bluebirds had five young in their first brood. When the first youngsters left the nest, the father became more attentive and helped care for the little ones that were just starting out in the world. They all stayed about the yard till the young knew how to hunt for themselves. Finally three of them disappeared; I suppose they went off with other bluebirds, and two of the young still stayed with us. The parents themselves seemed to disappear for a few days and I

thought they had left for good. Then one morning I saw the mother enter the house again and the father was there too, perched on the wire. He was more attentive than formerly. The next day I found a fresh egg in the nest. They had returned to raise a new family.

There were only three eggs in the second setting, and all hatched. The two young birds of the first brood followed the father about while the mother was sitting. Then when the mother began feeding her second family, I made some interesting observations. Her older children began following her about to hunt food, and to my surprise, I saw one of them bring some worms and after the mother fed, the young bluebird went into the box and fed her small brothers and sisters. After that I watched closely and often saw the birds of the first brood feed the little ones of the second brood. Perhaps the two birds of the first brood were girls and took readily to housework. They may have been learning for the next season when they themselves expected to have homes.

One of the young birds was very enthusiastic in helping her mother. Several times when the latter brought food, the young bird flew at her and tried to take the morsel she had in her mouth, as if saying: "Let me feed the children." And twice I saw the mother yield and let her older child feed the younger ones. It was a very pretty bit of bird life to watch these bluebirds. We were anxious to get a photograph of the mother and the young bird



MALE WESTERN BLUEBIRD AT NEST-HOLE IN APPLE TREE

helping her. We tried by getting on top of the house and focusing the camera on the wire where the birds often alighted. We finally got one view of the two as the young bird was just in the act of jumping for the worm the mother held.

Portland, Oregon.

SOME EXPERIENCES OF A COLLECTOR IN ALASKA

By JOSEPH DIXON

(*Editorial Note.*—Mr. Dixon is a member of the party headed by Miss A. M. Alexander for the purpose of exploring from a faunal standpoint some of the islands of southeastern Alaska. The following article is compiled with scarcely any emendations from personal letters written by Mr. Dixon to the Editor of this Magazine. We hope we do not overestimate the interest which we believe should attach to such direct accounts of the conditions under which the field naturalist must work in that portion of our continent. This is in no wise intended as an exploitation of the scientific results of the expedition, which will doubtless be reported upon in an altogether different form.—J. G.)

Windfall Harbor, Admiralty Island, May 2, 1907.—We made camp on the west side of the harbor in a little cove on April 17. We had to cut into a snow bank in order to make a level place to pitch our tents. We have six tents up but we need them all: three sleeping tents, one cooking tent, one work tent and a store room.

When we came there was from four to eight feet of snow on the level but we have had several warm days so the snow is not so bad now.

The only place you can hunt is along the beach. The harbor froze over last night and the alders have not opened their buds yet. The skunk cabbage is just coming up. No flowers yet but we have seen two butterflies (not cabbage either!) as well as a Rufous Hummer today. We failed to get any of them however.

I was just figuring up tonight and found that during the two weeks we have been here we have collected 171 specimens, 109 mammals and 62 birds. Of mammals we have two fresh bear skins, about 12 *Microtus*, seven shrews, two mink and about 65 *Peromyscus*. The *Peromyscus* average about: length 189; tail 98; hindfoot 23. This cannot be *P. sitkensis* as we first supposed as the latter are much larger. It doesn't measure up right for *P. keeni* either. Perhaps it is nearer the mainland form. They are a rich brown on the sides. We saw our first bat last night, probably a *Myotis* of some kind. The bears are just coming out of their dens and are staying up around the snow slides and the upper edge of the timber where they feed on deer that are about starved to death. It is impossible to hunt them without snow shoes. The two skins were bought from the natives. One is an exceptionally fine one almost black. We have both skulls. They were killed about 30 miles south of here where they come out early. The minks we bought from the natives too. We can't find any and they only got eleven during the entire winter.

Of birds we have taken: Canada Goose, Scaup Duck, Surf and White-winged Scoters, Pigeon Guillemot (half winter, half summer plumage), Marbled Murrelet, Short-billed and Bonaparte Gulls, Sooty Grouse, Northern Raven, Northwest Crow, Northern Red-breasted Sapsucker, Song Sparrow, Sitka Kinglet, Siskin, Hermit Thrush, Varied Thrush, Robin, Winter Wren, Chestnut-backed Chickadee, Townsend Fox Sparrow and Sandwich Sparrow.

A pair of small rosy red Crossbills were seen today. They were evidently not the White-winged. We saw an owl the other night that was almost as big as an eagle. We had just emptied both guns at a flock of geese when he flew out from a tall tree. We also heard another (Horned) owl hooting that night, and also what we call our "tin can owl." It had a little tinkling note something like that one at Bluff Lake, but it kept going all the time only stopping once in a while for breath. Another little owl was hollering over camp just at day break the other morning but we couldn't find him. The natives say there are lots of Ptarmigan

here on the beach during the winter but they have gone back to the mountains now.

May 4.—You will probably get this letter on the installment plan as I will keep writing off and on as the spirit moves me until the boat comes and I have a chance to send the letter to Juneau.

I took a fine set of Bald Eagle on the 30th of April. The nest was in the very tip-top of a broken-topped spruce, 116 feet from the ground. The nest was seven feet in diameter and big and strong enough so that I could stretch out in it. The eggs were fresh and are not much nest stained. The old birds wouldn't fight at all!

I took a female, nest and four fresh eggs of a Townsend Fox Sparrow yesterday. I think it is *townsendi*; any way I have seven specimens now so that I guess I can find out when we get back to civilization. The nest was about 50 feet back from high tide in a thick clump of spruce boughs that drooped almost to the ground. The nest was about eight feet up. The whole vicinity was dark and damp and the nest hung over a pool of water. These sparrows look and act almost like *stephensi*. I found the nest a week ago by watching the female carry feathers. I had to wade thru snow to get the nest yesterday so perhaps that will throw some light on the date of breeding of *stephensi*.

Mr. Littlejohn got two Crossbills yesterday and one today, all males in breeding condition. One was almost one-third less in size than the other but was evidently the same species. They are not White-winged.

We fired into a flock of about a dozen waders the other day and picked up four Aleutian Sandpipers, a Black Turnstone and a Surf Bird. We were surprised to find all three species together.

The Indians up here think that they own the whole country. They have tried several schemes to get us out. They want us to pay them for hunting here. Whatever their faults may be they certainly are candid. One old squaw came over the other day and we finally got her to talk English, and she said: "Bear he heap smart, he hear gun he no come. You white men damn fools; shoot! shoot!! shoot!!! all the time." It seems to be beyond their thick heads to imagine what we want with the little birds. But of course we have to shoot them.

May 9.—We took a set of Western Golden-crowned Kinglet this morning. We took the whole thing: female bird, nest (part of tree attached), and seven fresh eggs. How would you like to have that to stick away in the corner of your cabinet? The nest was found by Littlejohn about ten days ago while we were looking for a sparrow's nest. It was right on the beach on the south side limbs of a fir tree. The nest is the prettiest that I have ever seen and was well hid, the green moss of which it was composed blending with the green leaves. The nest was semipensile and was about twelve feet up. The eggs are peculiar. They are about the size of Bushtit's but are longer drawn out. The ground color is a creamy white and near the middle there is a well defined wreath of fine golden specks. There are lots of the Sitka Kinglets here too, and when we have more time we hope to find one of their nests.

Mr. Littlejohn got a male White-winged Crossbill the other day. They are evidently breeding now and are very shy and stay way up high. I had to climb about 80 feet the other day to get one that had been shot and lodged. We are getting lots of new waders now but the mammals seem about played out so we are working at Miss Alexander's suggestion on *birds*.

Mole Harbor, Admiralty Island, Alaska; June 2, 1907.—We just got back yesterday from a trip into the interior of the island. We have been here just two

weeks and during that time I have spent but about three nights in camp. Miss Alexander has hired a man by the name of Al Hasselborg to go with us. He is an accurate observer and possesses a great deal of local knowledge of the islands and is altogether the best woodsman that I have ever seen. He had spent some time prospecting in the interior of the island and had found three lakes, two small and one large one; but he had no boat so could not tell how large they were or where their outlets were. The first lake is about four or five miles due west of Mole Harbor. The second one is really just a continuation of the first and together they are about $3\frac{1}{2}$ or four miles long and very deep, as in some places a 100-ft. line would not touch the bottom 100 yards off shore. These two lakes are connected by a rapid stream and a 30-foot waterfall with the large lake, which is also very deep.

We packed the canoe up to the first lake and then packed up some grub and made camp for a few days. There were lots of beaver signs and cutting all around the lake and about 10 o'clock one morning when we were out in the canoe, a beaver came swimming around a bend and dove. When he came up again I began shooting at him with the rifle. I missed the first three times but the fourth shot just cut thru the skull between his eyes. He was evidently young and foolish and had been out late and was just going home or else I wouldn't have got him; because a beaver is nobody's fool I can tell you. An old wise one would put a coyote way back in the infant class. The lake's shore is very irregular and on many of the small points you can see little padded-down places in the grass at the water's edge where a beaver sits and chews the bark off of sticks. Usually there is a little pile of sticks from half to two inches in diameter and six inches to two feet long lying about. These are peeled and that makes them conspicuous. When eating the beaver squats and hunches himself up and then takes the stick in his fore paws and keeps twisting it round and round while he nips the bark off. One reminded me very much of a hungry man attacking a roasting ear of corn. They cut canals back into the woods for 50 feet or so, sometimes, so as to get back to the spruce trees. They prefer the willow, but as that is only found in a few favored localities most of them cut down small spruce trees. If no spruce is handy they will sometimes eat crabapple, huckleberry, and, as a last resort, alder. In the big lake, where there was a large stream coming in, we found a number of fine dams. Some of these dams were at least 100 yards long and in places four or five feet high. These formed a reservoir covering several acres. Above this dam there was a series of other dams; so taking it all together it was the dammedest creek I ever saw. I think that the beavers show their greatest engineering skill in the way that they divide the water so as to keep all the dams full and water-ways full between them. They fix the dams so that there is just a little water running over all the way along so that it does not wash out anywhere.

Most of the beavers lived in the holes in the bank, but others built houses. These houses resemble mammoth woodrat houses, as they are six feet high and 10 or 12 feet across at the base. The poorer ones were just a pile of saplings and sticks thrown together while the better ones looked as tho some one had shoveled mud on them. As many as six or eight beavers may live together in one house. They begin to come out of their houses about 6 o'clock in the evening and stay out until 6 or 7 o'clock in the morning. They are very shy and if an old one sees you he hunches himself up and brings his tail down with a pop on the water and you think that some one shot close by. If you bother them much they will leave and move to some other locality.

We have secured six specimens so far, all males. They are all very dark seal brown, almost black. There are a number back there and yet every one says that

there are no beaver on the islands, so we hope that it is something new. One specimen was 41 inches long and weighed 35 pounds. Another one was shot and stunned, and when Hasselborg went to pull him into the canoe the rascal came to and gave a big jerk and capsized the canoe. Hasselborg had to save the camera from going down so the beaver got away. If we had used the kodak less we would have had lots more skins.

We went up to the head of the lake and soon located three bears up among the alders on the mountain side above us. We had no grub and hadn't had any for a day, so we didn't have energy enough to climb the mountain. We went back to the first lake and about 5 o'clock Littlejohn and I started to go down to camp. It began to rain and the clouds came down so that we could scarcely see the tree tops. The huckleberry and the devilsclub had leafed out wonderfully in the few days that we had been over there and the first thing we knew we were off the trail. We tried to get back but couldn't. Then we tried to climb one of the low rolling hills to see if we could see out and tell where we were. After we had climbed several hills it began to get dark and we started for what we thought was Mole Harbor, but it was not long until we found that we were going round and round, for we came to our old tracks.

The wind was from the southeast when we started and that was all we had to go by, as we were so sure that we couldn't miss the trail that we had left the compass behind. Well, it was funny how that wind kept changing. First it came from the southeast, then from the east, next north and then west. We were not exactly lost; we just didn't know how we came, where we were, or which way we were going! Finally I said that I was going to follow a creek down until it either came to salt water or to the lake. We stumbled along thru the devilsclub and huckleberry for miles. Then the creek went into waterfalls in a deep canyon and we had more of a time. After we had gone along for about four hours in this way we began to look around for a place to hole up for the night, as we were wet to the skin, tired to death and had had nothing to eat for 24 hours. It was so rocky that we couldn't lie down, so we had to go a little farther and just then we saw water ahead and came out on the beach right near camp! Yell?—well we tried to and couldn't, but we forgot we were tired and soon got to camp. They had just got a fresh supply of grub from Juneau, and we soon had our clothes changed and sat down, and then I found I couldn't eat! I'd choke every time I tried to swallow, but I managed to get a cup of cocoa down, read a letter and crawl into bed.

When I tried to get up the next morning I promptly fell over and lay there a while. I lay around for two days kind of dazed and kept wanting to walk, walk all the time. Now I keep a compass chained to me all the time but expect to get lost again as Hasselborg and Stephens both had compasses the other day and still missed their way.

Several days later Hasselborg, Littlejohn, Miss Alexander and I went back again. We made camp about 6 o'clock, ate supper and then went out in the canoe to look for bear; up on the mountain side. We soon saw one feeding in a gulch and Hasselborg started up after it. Littlejohn went up the creek and Miss Alexander and I watched from the boat and motioned to Hasselborg when the bear moved. He had to climb nearly 1000 feet, but part of it was up a snow slide. He made it in 40 minutes. (It took us one hour and a half several days afterwards.) Then we heard six shots and saw the bear disappear in the alders. Pretty soon we heard a dull thump, thump, and the old bear came rolling down over the cliffs. He fell about a quarter of a mile and would have rolled clear to the lake had he not hit a log just right.

We skinned him next morning and found that four shots had hit him. He had several old scars that showed that he had fallen before, but if you would look at some of the places that they go you would not be surprised. The fur was poor but the skull was about as large as the largest we have. The next day we hunted beaver and got two beaver cubs.

The next morning Hasselborg and I started out for Ptarmigan. We climbed up a ways and it began to get steep and cliffy and we came to some terrible places where we scarcely could go at all; we often had to turn back and hunt a better place. The ravines were filled with snowslides part way up; a swift stream came down and had thawed a large cavity out at the top and had undermined and made a passage below the snow. While I was crossing one of these slides the snow gave way and I fell in. I hung onto the gun and that was all that saved me from being put into cold storage for eternity, as the slides rarely melt. The gun caught on each side of the hole and I did some pretty lively scrambling, I can tell you!

When we got up on top it began to blow and snow, but there were small patches of heather that were bare, and the snow was hard enough to walk on. As we neared the summit I saw what looked like a pigeon circling around; but pretty soon it came closer and I saw that it was a Ptarmigan. They would fly out over the mountain side and let out a rasping cackle which sounds just like some one running a nail over the teeth of a stiff comb. Then they would hover for an instant and finally swoop down and light on a rock. I only saw five, but I got three of them. They were all males still in white winter plumage (May 31). One was just beginning to get a few dark brown feathers on his head and neck. Hasselborg saw a female the day before which was mostly brown, but we walked all over every bare space near the summit without scaring any up. He also saw what must have been a *Leucosticte*, but we could not find any of them again. The Ptarmigan have a black line thru the eye and are comparatively small so I suppose that they are Rock Ptarmigan. Hasselborg says that there are some here that have an entirely white head in the winter and are larger, so I guess the Willow must be here too. We had a hard time getting down the mountain and came to a place where we crawled down some alders and hung on to some twigs and peeked over. There was a 75-foot cliff below us and we had to go a mile to get around it. I started to slip in one place and grabbed a sharp rock that tore a big hole in the side of my hand, but I had to grab something or I would have gone clear down to the lake.

We saw two immense bears up on the mountain side but they were in a place that we could not climb to. It is surprising where they can go. They are big and heavy but they can go lots of places where a man can't.

I was looking over your "Special Desiderata." We are trying to make a big hole in it. Have the Ptarmigan, four pairs of grouse, and a pair with nest and set of eggs of Sharp-shinned Hawk. Saw a pair of Redtails but could not get them. Stephens and Hasselborg are up to the lakes now and I think that they will get some *Leucostictes*.

We saw several Townsend Warblers over at Windfall Harbor, but none here. Varied Thrushes are quite common here but are hard to get. We have everything that you got at Sitka (of the land birds) except eight species. In addition we have White-winged Crossbill, Northern Redbreasted Sapsucker, Pine Siskin, Myrtle Warbler, Redbreasted Nuthatch, and possibly some others that I do not remember without looking them up.

Miss Alexander is going to Juneau in a day or two to see what has become of our launch. We have been waiting for it for over a month now but the weather has been bad. Our next stopping place will be Red Bluff Bay on Baranof Island.

Miss Alexander, Hasselborg and I are going to go down the river from the lakes to Kootznahoo Inlet. If we can do this we will have crossed the island almost in the middle. Miss Alexander does not ask us to do anything that she would not do herself, but it takes a pretty good one to follow her. Well I must get to work on my notes now, so will have to let up for this time.

Hooniah, Chichagof Island, Alaska; June 20, 1907.—We just got here today and got our mail. We left Red Bluff Bay on Baranof yesterday and came up to Fresh water Bay and anchored last night. Then we came back to Hooniah to store our gasoline and some provisions.

Miss Alexander, Mr. Hasselborg and I left Mole Harbor, on the east side of Admiralty, on June 11 for a trip across the island to Kootznahoo Inlet and Killisnoo. We got thru all right but we had quite a trip. We were a little over two days going from Mole Harbor to Killisnoo. The total distance that we traveled was about thirty miles.

I saw lots of birds going down the river, several of which I couldn't recognize. I broke my paddle trying to stop to get one and it seemed as tho they were near swift places in the river where we couldn't stop. One place we had to portage around a waterfall and rapids for about a mile and a half and it was pretty tough. Shooting the rapids was all right but it would have been all off with us if we had hit a rock. The tide rips and rapids in Kootznahoo Inlet are worse than the rapids in the river, when the tide is running out.

I found a Duck Hawk's nest at Danger Point just above Killisnoo as we came down and I went back later and got the female and three downy young, about a week old. The nest was under a clump of alder roots about 100 feet above the breakers on a limestone cliff. The young ones were hungry, so I chucked them into the fish basket and brought them along. They are regular pigs and eat greedily five times a day. They have almost doubled in weight in a week. We have some good photos of them already and if they thrive, as they give every promise of doing, we will get a whole life series of them "a la Finley." I have had lots of fun with them. A sea voyage just improves their appetite.

While we were crossing the island the rest of the party went on down to Red Bluff Bay and made camp. While they were unloading they got too much in the skiff and when Littlejohn's 225 pounds listed a little, the boat capsized with our collecting chests, note books, etc. Stephens slipped just as he was carrying his chest ashore and got a lot of his plates and photographic material wet. That night the tide took a crazy notion to call on them and the next morning their cornmeal, sugar, etc., was wet. They had cautioned *us* to be careful!

Glacier Bay, Alaska; July 4, 1907.—Well, this is the "Glorious Fourth," and it is raining here so that I haven't been able to stick my head out all morning. Have been trying to straighten out accounts with my neglected note book this morning. It is a good thing that we have a rainy day once in a while or my note book would be more neglected than it is.

There are lots of things here. This is the first place we have struck that we have found enough to keep us busy. The tent is full of specimens and they don't dry readily either. I counted up last night and found that we had 628 birds and mammals (332 birds and 296 mammals). I think that this should be very gratifying to the "bird fiend." I have preferred land birds to water birds but sometimes there was little choice. Well, I must go out and "lassoo" an iceberg and tow it in so we can have some ice cream for dinner, and I'll finish this later.

Ice cream was all right, but Littlejohn had to sit under an umbrella while he ground it out.

When we were at Hooniah we all went up on the mountain (2600 feet) and I staid over night and trapped while Hasselborg went bear hunting and Stephens and Littlejohn came back to camp. Stephens got one Ptarmigan. It was a male about one half winter and one half summer plumage. Stephens flushed him from a clump of scrub hemlock near the summit. I saw one the next morning about three o'clock, but he was whizzing off down the mountain side. They were very conspicuous and consequently lying low. We didn't get any more.

I saw several *Leucostictes* and had two good shots at one but failed to get him. It was about four o'clock in the morning and I was about froze. I saw others but couldn't get to them as they were on rock slides among cliffs that I couldn't hang on to.

I had a waterproof (?) canvass but there was nothing to make a fire out of and it snowed and blew that night. My canvass leaked, I got wet and almost froze to death. I caught cold in the side of my head and was laid up for a week afterwards with an ulcerated tooth and you know I'm worse than useless when I have the toothache! And when I was laid up here a bear had to come along and I couldn't get out to join in the killing.

Well, I got two big *Microtus* (178 and 175 mm.) and two shrews in my traps, and hunted from three o'clock in the morning till about eight; then I started down. I got off the trail on the way down and was climbing around in a big patch of windfalls when a bird hopped up and sat on a log and looked at me. I saw that it was something new to me and that it was exactly what Hasselborg had seen the day before. Well, I got him and concluded that it was a pine grosbeak! Well, I got three males and three females before I got out. I only saw nine birds, but thought I would take all that came handy. One male was in the bright red plumage. They were all in breeding condition but they are hard things to put up. I see that Bailey says the Alaska Pine Grosbeak is restricted to the interior. What would this be apt to be?

We packed up the next day and came over here just north of Bartlet Cove. The Indians came over one morning early and said that their dogs were after a bear. Hasselborg and Littlejohn went with them and after chasing around thru the woods for about an hour, in which they had separated, they finally came onto the bear in a thicket of alders. The bear charged upon them and the Indian that had a gun turned and ran without shooting. The other Indian had no gun so he started too. Littlejohn was at the tail end and saw the Indians and the bear coming. He sneaked behind a tree and shot the bear thru the shoulders just as she was reaching out to grab the Indian. The bear turned around and it took three more shots to finish her. She had a cub which they got; the dogs had been worrying her all night so she was "red hot." It was a brown bear about five feet, eight inches long and the fur has faded to a dirty yellow on the back. Hasselborg has killed four bears since he has been with us. He had two coming at him at once on Chichagof. It took three shots to kill one and five to stop the other, and when he quit he only had two shells left. They were male and female, and this is the breeding season; so that was evidently what made them so ugly.

Yesterday we tried to go up to the bird islands about fifteen miles from here. They are right in front of Muir Glacier. It is throwing out so much ice that we couldn't get to the islands, but will try again later. We got out and the fog came down so that we couldn't see where we were and got caught in an eddy. The ice began to pack and we almost lost the canoe before we knew it. We finally got to

where the ice was so thick that we couldn't get thru at all, and I almost froze before we got out. There were lots of cormorants sitting on the ice which reminded me very much of that plate of the Pelagic Cormorant in Bailey's "Hand-Book."

Marbled and Kittlitz Murrelets are common here but we can not find their breeding ground, and judging from birds we got they have either bred some time ago or are just going too.

My Duck Hawks are great pets and are growing rapidly. They come into the tent and beg for bodies now, and they have a tremendous appetite. One gained two ounces a day for four days, and is doing better now.

July 8.—We went up to the island on the 5th. Glaucous-winged Gulls, Pigeon Guillemots, and Pelagic Cormorants were breeding on the island.

The Muir Glacier has retreated on account of an earthquake four or five years ago until the face of it is about twice its former size. The discharge of ice is at least twice as great and the Marble Islands are right in front of the glacier so that they have ice floating thickly about them all the time. This change in temperature has evidently had a noticeable effect on the nesting of the birds on the islands. The cold has evidently driven them elsewhere as we found lots of signs that showed that the birds had formerly bred there abundantly; the Indians haven't exterminated them because they can't get there on account of the floating ice. A few Tufted and Horned Puffins were nesting in crevices in the rocks. I thought that I had got the "Old Boy" himself when I shot one of those Horned Puffins and I was sure of it when it grabbed hold of me with that "tin-shears" beak. We saw a pair of Parasitic Jaegers chasing a Duck Hawk about the islands. Several species of land birds were seen. Townsend Sparrows breed as also do Alaska Hermit Thrushes. Saw also Savanna Sparrow, Least Sandpiper and Barn Swallow. The Pelagic Cormorants were just beginning to lay, as I saw four nests with one egg in each. They make a particularly groaning sound when on the nest that sounds like some one moaning in pain. We could hear it quite a ways out before we landed and couldn't imagine what it was.

I took in three adult Pelagic Cormorants as they were in fine breeding plumage. They were pretty tough to put up but not nearly so bad as the Horned Puffins. I got five Kittlitz Murrelets on the way, so I haven't been idle since I got back.

We will probably spend ten days or so on the other side of the bay and then go out on the outside of Chichagof near Cross Sound. I suppose that will be about the end of my collecting as I expect to leave Juneau for Stanford about August 10.

CATALOG OF BIRDS COLLECTED BY W. W. BROWN, JR., IN MIDDLE LOWER CALIFORNIA

By JOHN E. THAYER and OUTRAM BANGS

FROM the autumn of 1906 until the spring of 1907 Mr. W. W. Brown, Jr., was engaged in collecting in Lower California in the interests of the Thayer Museum at Lancaster, Massachusetts. During this period his headquarters were at San Quintin, from which place he made excursions into the surrounding country.

At San Quintin, Brown made large collections, chiefly of sea birds, but these we do not list as they contained species mostly well known from the region.

In October and November he visited Rosario, latitude 30°; and in late February, March and early April he worked south a little past latitude 29° or almost opposite Cerros Island, collecting at Santana, Rosarito, San Andris and San Jabier. It is the specimens secured at these points, south of San Quintin, that we list in the present article. The region is an interesting one, not only because several subspecies are peculiar to it, but because in other cases it appears to be where the Cape St. Lucas form intergrades with that of southern California or northern Lower California. Some of the records also extend the ranges of Cape forms to well up the peninsula, as in the case of the Violet-green Swallow and the Ash-throated Flycatcher.

A good deal has already been published on the birds of this general region by Anthony, Bryant, Belding and others, but by far the most important contribution to our knowledge of the ornithology of Lower California is Wm. Brewster's "Birds of the Cape Region of Lower California."¹ In this carefully executed work the author gives the range of every species and subspecies so far as known, and references to the writings of all other ornithologists who have dealt with Lower California birds.

Puffinus opisthomelas Coues. One male, San Jabier, April 2, 1907.

Parabuteo unicinctus harrisi (Aud.). Two males, Rosarito and Santana, March 3 and March 19.

Accipiter cooperii mexicanus (Swains.). One male, Rosario, Nov. 4, 1906, and one female, November 25.

Accipiter velox pacificus (Lesson). One male, Rosario, November 19.

Buteo lineatus elegans (Cassin). One adult female, November 9.

Cerchneis sparveria peninsularis (Mearns). Four specimens, both sexes, Rosario, November, and Santana, March 18. The latter, an adult male, is a pale and small example, its wing measuring but 167, and is an extreme example of *peninsularis*.

Lophortyx californicus vallicola (Ridg.). Eighteen specimens, Rosario, October and November, and San Jabier, San Andris and Rosarito, February and March. Nests with eggs were taken at San Jabier, March 27 and April 1.

Oxyechus vociferus vociferus (Linn.). One female, Rosario, November 6.

Zenaidura carolinensis carolinensis (Linn.). Two specimens: a female, Rosario, November 6, and a male, Santana, March 18.

Melopelia leucoptera (Linn.). One adult female, Santana, March 20.

Chamæpelias passerina pallescens Baird. One adult female, Santana, March 14.

Geococcyx californianus (Less.). Three specimens, both sexes, Rosario, October and November, and Santana, March.

Colaptes chrysoides brunnescens Anthony. Eight specimens—one ♂ from Rosario, November 26; seven, both sexes, from Santana, San Jabier, and Rosarito, March.

These skins are a trifle darker brown on the upper parts than in specimens from Arizona and Sonora in corresponding plumage, and, if *brunnescens* can be maintained as a subspecies, would probably all be considered as belonging to it.

Sphyrapicus ruber (Gmel.). One female, Rosario, November 2.

Dendrocopos scalaris lucasanus (Xantus). Five adults, both sexes, Santana and San Andris, February and March.

¹ Birds of the Cape Region of Lower California, Bulletin of the Museum of Comparative Zoology, Vol. XLII, No. 1, September, 1902.

Asio wilsonianus (Lesson). One female, Rosario, November 14.

Bubo magellanicus pacificus (Cassin). Two specimens, male and female, Rosario, November 18. These were, without doubt, migrants or winter visitors, as the breeding bird of the region is *B. m. elachistus*.

Bubo magellanicus elachistus (Brewster). Three specimens, both sexes, Rosario, November. The five skins of Great Horned Owls listed above were carefully identified for us by Nelson and Oberholser, and there is no question of the correctness of the identification. Nelson took *B. m. elachistus* in the same general region in the summer, and it would appear to be the breeding form of the Peninsula of Lower California north at least to San Quintin.

Speotyto cunicularia hypogæa (Bonap.). Eight specimens, both sexes, Rosario, November, and San Jabier, March.

Strix pratincta Bonap. Seven specimens, both sexes, Rosario, October and November, and San Andris, February 29. This latter bird, a female, had an egg in the oviduct nearly ready to be laid.

Phalænoptilus nuttallii nitidus Brewster. Two adults, male and female, Rosario, November 1 and November 12.

Calypte costæ (Bourc.). Four adults, three males and a female, San Jabier and Rosarito, February 22 to April 1.

Pyrocephalus rubineus mexicanus (Scl.). One female, Santana, March 24.

Empidonax difficilis Baird. Two males, Santana, March 18 and March 20. These are probably migrants as they are certainly referable to *difficilis* and not to *cineritius*.

Empidonax griseus Brewster. Two males, Santana, March 12 and 14.

Sayornis saya (Bonap.). Four adults, both sexes, San Jabier, San Andris and Rosarito, February 23 to March 30.

Sayornis nigricans (Swains.). Three adults, males, Santana, March 11 to March 20. These birds have the under tail coverts nearly wholly white and represent *S. nigricans semiatra* (Vigors), if that form is recognized as a subspecies. We, however, are rather inclined to agree with the opinion of Brewster that the characters are too slight. Like Brewster's skins from the Cape Region, these Santana specimens have rather large bills.

*Myiarchus mexicanus*² *pertinax* (Baird). Thirteen adults, both sexes, Rosarito, Santana and San Jabier, March. These skins are all referable to the Cape St. Lucas form, differing from true *mexicanus* in grayer back and nape and much larger bill.

Tyrannus vociferans Swains. One adult female, Santana, March 16.

Otocoris alpestris enertera Oberholser. Nine adults, both sexes, Rosarito and San Jabier, February and March.

Mimus polyglottos leucopterus (Vigors). Twenty-six adults, both sexes, Santana, San Jabier and Rosarito, March and April.

Oroscoptes montanus (Townsend). Twenty-nine specimens, both sexes, Santana, Rosarito, San Jabier, February 23 to April 1.

Brewster states that two specimens examined by him from La Paz were "larger and much deeper colored" than birds from Texas. The present series shows some variation in color, but on the whole we can see no decided difference either in size or color between it and specimens from New Mexico, Texas, etc., when skins in the same condition of plumage are compared.

² Osgood (*Auk*, Vol. XXIV p. 219, April, 1907) has shown from his examination of Kaup's type that the Ash-throated Flycatcher is *M. mexicanus*, and that *M. cooperi* is the name of the bird we have been calling *Myiarchus mexicanus*.

Toxostoma cinereum mearnsi Anthony. Twenty-four adults, both sexes, Rosario, San Jabier, and Santana, November, March and April. The skins from Rosario are of course true *T. c. mearnsi*; those from the more southern localities—San Jabier and Santana—show slight signs of intergradation toward true *cinereum* of the Cape region, especially in the black spots on the under parts being rather less purely black, more brownish.

Toxostoma rediviva helva Thayer and Bangs. *Toxostoma rediviva helva*, Thayer and Bangs, *Proc. New Eng. Zool. Club*, Vol. IV, pp. 17-18. April 30, 1907. One hundred and thirty-four specimens, both sexes, Rosario, October 25 to November 26.

Toxostoma lecontei arenicola Anthony. Thirty-two specimens, adults and young of both sexes, San Jabier, March 27 to April 7. This Thrasher must breed very early in the season as nestlings at this date were fully fledged, many of them full grown. All young birds including those practically full grown have the bill much shorter than the adults. In color the young are much like the adult except in being rather more fulvous, especially on belly and under tail coverts, and less "bleached." The adults are all in rather worn and faded plumage.

Planesticus migratorius propinquus (Ridg.). One female, Rosario, November 15.

Polioptila cærulea obscura Ridg. Three adults, two males and a female, Santana and San Jabier, March 14 to April 1.

Polioptila californica Brewster. Four adults, three males and a female, Santana and Rosarito, February 24 to March 17. These skins show some signs of being intermediate between *P. plumbea* and *P. californica*. The white edge of the outer rectrix is wider than in true *P. californica*, tho it is black next the shaft, and the gray of under parts is darker than in *P. plumbea* more nearly as in *P. californica*. The color of the back is about intermediate between that of typical examples of the two forms, being darker than in *P. plumbea*, but not so dark nor so slaty as in *P. californica*.

Heleodytes brunneicapillus affinis (Xantus). Fifteen specimens, adults of both sexes, Santana and San Jabier, March. This series represents a form decidedly nearer to *affinis* than to *bryanti*. In only one character do these skins approach *bryanti* and that is in the spotting below which is usually heavier than in Cape St. Lucas specimens; still some skins in the series differ even in this respect but little from true *H. b. affinis*. Anthony (*Auk*, Vol. XII, p. 280, 1895) says he would expect to find intergradation taking place between the two forms at no great distance south of San Fernando, but that skins from that place are nearer *bryanti*. A nest with three fresh eggs was taken from a cactus, three feet from the ground, March 17 at Santana.

Thryomanes bewickii cerroensis (Anthony). Ten adults, both sexes, Santana, San Andris, San Jabier and Rosarito, February 27 to March 31. These are in all respects quite like skins from Cerros Island, and the Cerros Wren is therefore not an island form but occurs also in the adjacent parts of the peninsula of Lower California. Nelson and Oberholser have examined this series and agree with us that the specimens are identical with Cerros Island examples.

Salpinctes obsoletus obsoletus (Say). One adult female, Santana, March 19.

Auriparus flaviceps lamprocephalus Oberholser. Four adults, three males and a female, Santana and Rosarito, March. These all are referable to the Cape St. Lucas form, being small, the wing in the series measuring: ♂ 49.5, 49.5 and 51; ♀, 48.5.

Aphelocoma californica obscura Anthony. Two adults, male and female,

Santana, March. These two skins are not typical, but are tending toward *hyoleuca* of the Cape region.

Lanius ludovicianus gambeli Ridg. Eight adults, both sexes, Santana, Rosarito and San Jabier, February 27 to March 30. These skins were identified for us by Nelson and Oberholser, who pronounce them perfectly typical. Gambel's Shrike appears to be the breeding form of the whole peninsula of Lower California.

Vireo vicinior Coues. One adult female, Santana, March 13.

Vireo bellii pusillus (Coues). One adult male, Santana, March 17.

Ampelis cedrorum (Vieill.). Two males, Santana, March 14 and 20.

Phainopepla nitens (Swains.). Three adults, both sexes, Santana, March.

Tachycineta thalassina brachyptera Brewster. Three adult males, Santana, March 11. These are extreme examples of the Cape St. Lucas form, measuring respectively—wing 107; 104, 103.5; tail 42.5, 42, 43. This record establishes the fact that the form extends at least half way up the peninsula.

Anthus pensilvanicus (Latham). One adult male, Santana, March 24.

Helminthophila celata lutescens Ridg. Three specimens, two males and a female, Santana and San Jabier, March 11 and March 28.

Geothlypis trichas arizela Oberholser. Two adults, male and female, San Jabier, March 28 and April 4. The plumage is quite abraded in both, and they have the appearance of having been breeding birds.

Wilsonia pusilla chryseola Ridg. Two adult males, Santana, March 19 and 20.

Scolecophagus cyanocephalus (Wagler). Three males, Rosario, November.

Icterus cucullatus nelsoni Ridg. One adult male, Santana, March 2.

Icterus parisorum Bonap. Three males, Santana, March 16 to 22.

Agelaius tricolor (Aud.). One male, Rosario, November 11.

Agelaius phoeniceus neutralis Ridg. Two males, Rosario, November.

Sturnella neglecta Aud. Five specimens, both sexes, Rosario, November, and Rosarito and San Jabier, February and March.

Astragalinus psaltria hesperophilus Oberholser. One adult female, San Jabier, March 27.

Carpodacus mexicanus frontalis Say. Two adults, male and female, Santana, March 20 and 31. The adult male is in color perfectly typical *frontalis*, with the red portions of the plumage restricted exactly as in the average male of that form. Its wing measures 74 mm.—perhaps a trifle short for *frontalis*; but Mr. Brewster found so much variation in his series from Cape St. Lucas of *C. m. ruberrimus* in measurements that he considers this character cannot be relied upon to distinguish the form. The wing of the female measures 74 mm., also—about the average length in any large series of *C. m. frontalis*, female.

Calamospiza melanocorys Stejneger. One male, Santana, March 31.

Passerculus sandwichensis alaudinus (Bonap.). Two specimens, male and female, Rosarito, February 25.

Amphispiza bilineata deserticola Ridg. Fourteen adults, both sexes, Rosarito, San Jabier, Santana, February 26 to April 1.

Amphispiza belli cinerea Towns. Seventeen adults, both sexes, San Jabier, Rosarito, February 22 to March 31. To secure a good series of this very local and strongly characterized subspecies was one of Mr. Brown's particular missions to this region. He found the bird to be not very common at the places at which he collected.

Spizella socialis arizonæ Coues. Two adults, male and female, Santana, March 20 and 24.

Spizella atrogularis (Cabanis). One adult male, Santana, March 19.

Spizella breweri Cassin. Ten specimens, both sexes, Santana, San Jabier and Rosarito, February 26 to April 1. Mr. Brown did not take *Spizella pallida*, tho it probably occurs in this region in winter.

Melospiza cinerea cooperi Ridg. One specimen, Rosario, November 18. This bird, a migrant, of course, is not typical, having probably come from a region where *cooperi* intergrades with some other form.

Zonotrichia 3 leucophrys leucophrys (Forster). Three specimens, adult male and female, and young male, Rosarito, and San Jabier, March 2, 27 and 29.

Zonotrichia leucophrys gambelii (Nuttall). Seven specimens, adults and young of both sexes, Rosarito and San Jabier, February 25 to April 2.

Oreospiza chlorura (Aud.). One male, San Jabier, March 30.

Pipilo crissalis senicula (Anthony). Seven adults, both sexes, Santana and San Jabier, March. Some skins in this series have the throat distinctly paler posteriorly, while others have it uniform; all are whitish in the middle of the belly, and intergradation with *P. c. albigula* is plainly indicated.

Boston, Mass.

SOME COLORADO NOTES ON THE ROCKY MOUNTAIN SCREECH OWL

By ROBERT B. ROCKWELL

DURING the long dreary winter months when the countryside is shrouded in snow and ice and when most of our feathered friends are taking their annual vacation in the sunny southland, there is one little fellow who is constantly with us and who, tho very inconspicuous to the casual observer, is sure to be found by the lonesome bird student who is disconsolate enough to brave snow and cold for a short visit with the birds along the well wooded streams in the vicinity of Denver.

The Rocky Mountain Screech Owl (*Megascops asio maxwellae*)—for this is the feathered gentleman to whom I refer—is a resident thruout the year all along the eastern base of the foothills in the north central part of Colorado, but his hunting and breeding grounds are closely restricted to the well wooded creek bottoms, the only locations in this sparsely timbered region which afford him proper food, nesting sites and means of concealment.

As to whether this bird performs a slight north and south movement at migration periods, there seems to be a difference of opinion. Some observers declare that *Megascops* leaves its summer home around Denver, and moves south as far at least as Colorado Springs (75 miles), and its breeding grounds are occupied as a winter home by migrants from farther north. Others claim that it spends the entire year in the same haunts, laying its eggs in one of the many cavities occupied during the winter. Whichever view of the matter is correct, it is a fact that thruout the year the "owl stumps" so dear to the memory of every bird student, are occupied by these birds, and it is seldom indeed that a good sized grove of aged timber, with a few dead stumps scattered thru it, will not contain a pair of Screech Owls.

A very dull and lifeless bird you would undoubtedly call it as—your arm in—

³ We are of course aware of the name *Hortulanus* Vieillot (see ALLEN, Bull. Am. Mus. of N. H. Vol. XXIII, p. 360, 1907) that by first species rule replaces *Pipilo* and by elimination *Zonotrichia*, but until it is formally allotted to one or the other, we prefer using the old names.

served in an old flicker's nesting cavity—you gently stroke the brooding bird with your hand, without a sign of fear or anger on the part of the bird; but your preconceived ideas of its nature will receive a rude shock when you carefully slip your hand under it to remove it from the eggs, and as the long needle-like claws sink deep into your hand and you pull the bird forth from the hole with its red mouth open, its bill clicking defiance and its great yellow eyes flashing anger, you will

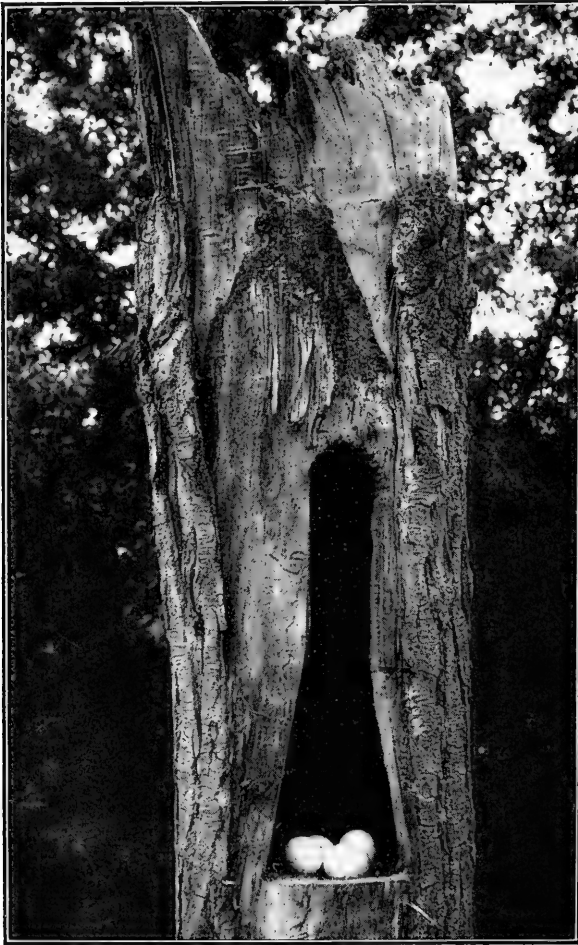


A TYPICAL NESTING SITE OF THE ROCKY MOUNTAIN SCREECH OWL

humbly admit that here at last you have found a Westerner with the true old Yankee fighting blood; and as you endeavor to remove those vice-like claws from some badly punctured fingers you will learn that bull-dog tenacity is also among the little fellow's characteristics.

With the first faint signs of spring and often while the wet spring snow is still

on the ground, this owl begins preparation for its nest building, which, by the way, is simple in the extreme. The month of April is the usual time for fresh eggs; and to be more precise than this as to date is hardly possible, as I have found fresh eggs as common during the first week of April as the last, and I am led to believe that the nesting date is governed largely by climatic conditions. Moreover, the nesting season is not confined to the month of April by any means, and nests with eggs have been found as late as the 30th of May. This is, however, an extreme date and is undoubtedly the result of an accident of some kind.



HOME OF ROCKY MOUNTAIN SCREECH OWL; WALL CUT AWAY TO SHOW NEST CAVITY

As has been stated before the nesting site is invariably along the well wooded water-courses and in more or less dense groves of cottonwoods and occasionally willow or box-elder. A peculiar characteristic of this bird is its predilection for sluggish or stagnant water, and one of the prerequisites of a model nesting site is a small slough or pool within a short distance of the nest hole. I am at a loss to know why this is so, unless it is that frogs and crawfish form no inconsiderable portion of the bird's food, and close proximity to a source of food supply may be a solution of the problem.

The very great majority of nests are found in cottonwood trees. This is probably due to the fact that this tree greatly predominates along all the foothill streams, and it is the variety most commonly used by the Red-shafted Flicker, the deserted excavations of which the Screech Owl nearly always occupies. However, natural cavities are occasionally resorted to; but owing to the nature of the trees these are found mostly

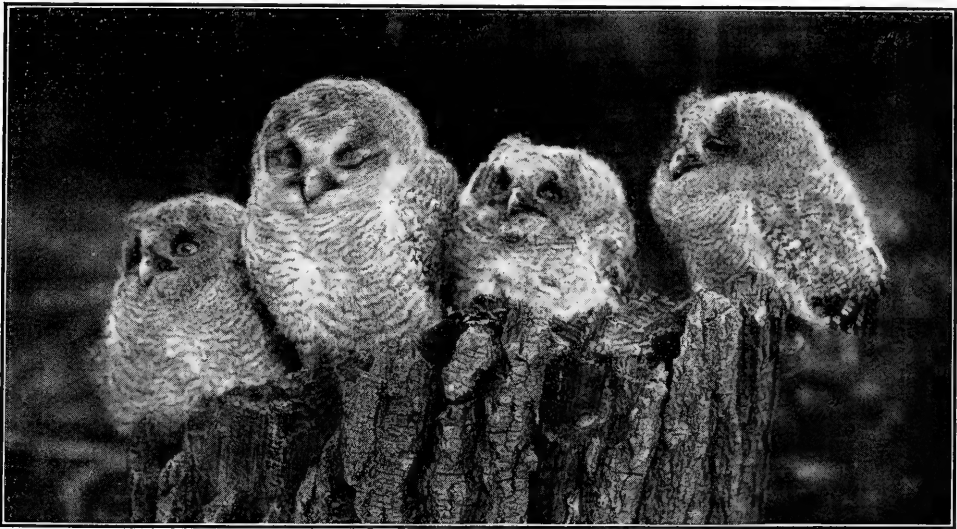
in box-elder or black willows, the cottonwood rarely rotting out in this manner. Captain Bendire in his incomparable work on North American Birds, states that the birds occasionally lay in the deserted nests of the Magpie.

The size of the cavities and entrances to the same naturally vary greatly. The Screech Owls do not excavate at all, but simply preempt the cavities as they are. It is extremely rare, however, that a nest is found in a cavity which is exposed to the elements, great care evidently being used to select a cavity which is more or less

sheltered. The eggs are usually laid on a bed of refuse, such as wood dust and the accumulations of a like nature (which are sure to be found in a tree cavity) over which a thin layer of feathers of small birds has accumulated thru the feeding of the owls, but I do not think that any attempt is made by the birds at nest building. The nests are always littered with the remains of small creatures—the food of the brooding female—including frogs, craw-fish, small birds and rodents, and occasionally a rabbit. The blood-stained eggs bear mute witness of the bloody nature of the birds' feasts.

The height of the cavities above the ground varies from five to forty feet, but the majority are between ten and twenty feet. The average height of twenty-five nests examined by the writer is $13\frac{1}{2}$ feet. Extremely high holes are rarely if ever used by the birds.

The great majority of full clutches contain four eggs, tho occasionally three or five are deposited. In the twenty-five sets it has been my good fortune to examine in the nests, the following sets were found: One of 2, five of 3, fifteen of 4, two of



YOUNG OF ROCKY MOUNTAIN SCREECH OWL NOT YET ABLE TO FLY

5, one of 6 and one of 7. The set of 2 was a second clutch, the first set of 4 having been taken 23 days previously to the date upon which the set of 2 was found in which incubation was about a fourth advanced. The comparatively large number of sets of three conveys a wrong impression, and is probably due to a little over-anxiety to collect the eggs, not giving the parent sufficient time to complete the clutch. I believe one in fifteen sets would be nearer the proper ratio of 3 and 4. The set of 6 was laid by a particularly prolific female which had laid sets of five on the two preceding years; while the set of seven I cannot account for unless it was laid by two females, which is very improbable. This set was found May 30th, two birds were flushed from the cavity, and all seven eggs were addled. These two last mentioned sets and one set of six collected by Prof. A. H. Felger, are, so far as I can learn, the largest sets of this sub-species on record.

Quoting from Bendire, "The eggs of the Rocky Mountain Screech Owl are pure white in color and moderately glossy, the shell is smooth and finely granulated. In shape they vary from oval to a broad elliptical oval, some being de-

cidedly more elongated than any other eggs of the genus *Megascops* I have seen." Twenty eggs in the writer's collection average 1.17 by 1.43 inches; the smallest 1.12 by 1.35 and the two largest 1.15 by 1.53 and 1.21 by 1.50 inches. A set of four mentioned by Davie in his "Nests and Eggs of North American Birds" averages 1.21 by 1.49 and contains one egg which measures 1.26 by 1.54, the largest egg I have known of.

The eggs are laid every other or every third day and incubation begins as soon as the first egg is deposited. The young are consequently hatched on successive days and it is rare indeed that a brood of owlets is found which does not contain a weakling bird, smaller, more scrawny, in poorer flesh, and with less animation than his brothers and sisters.

The newly hatched nestlings are covered with a coat of beautiful fine white down, and with their weak, subdued little "cheep" and queer shaped heads are quite attractive little creatures. As they grow larger and stronger this baby beauty rapidly leaves them, but they still retain the soft and not unmusical quality of voice until they begin to feather out. The young are among the most helpless of

nestlings and their development in the nest is exceedingly slow. One nest that contained three young on April 28th, still contained two birds on May 26th that were fully fledged but could not fly well.

As soon as the young leave the nest cavity they take to the cottonwood trees, doing most of their flying at night and remaining perfectly quiet during the day, and their resemblance to the branches among which they sit (or to an old Oriole's nest) is remarkable.

The brooding females are very close sitters and it is very seldom that one will leave the eggs without being removed by hand. However, if a bird is disturbed frequently,

she will soon learn to leave the nest as soon as the tree is struck, and will usually disappear from sight in the dense underbrush. When the bird is removed by hand and liberated she will usually fly to a nearby limb and voice her displeasure by sharp snapping of the bill and low moans; and with body thrown forward, ear tufts raised and eyes blazing her attitude is very menacing. On one or two instances where incubation was advanced I have known the female to return directly to the nest when liberated from the hand.

The female performs all the duties of incubation, her food being brought to the nest by the male, who, judging from the remains in and around the nest, is at all times a bountiful provider. This gentleman during the process of incubation can usually be found in another cavity not far distant from the nest, which is usually well filled with provisions. He is very careful, however, that no roving ornithologist shall lay hands on him, and usually the first rap on the tree will bring his little round head to the cavity entrance, and after surveying the intruder for a moment with a surprised expression, clumsily launches himself on the air and with short awkward wing-beats quickly disappears from sight.



ADULT MALE ROCKY MOUNTAIN SCREECH OWL

When the young have left the nest, the parents join the brood among the trees and during the late summer and early fall are seldom seen owing to their quiet and seclusive habits; but as the cold, frosty nights approach the birds prepare the numerous cavities with warm linings of feathers of the smaller birds, and it is in these cosy winter homes that *Megascops* is found thruout severe weather.

The birds are of a rather solitary nature and rarely more than one pair is found in a grove, thruout which will be seen extensive evidences of their occupancy. I have never found two nests within a half mile of each other and ordinarily they will be separated by twice that distance.

The range of this subspecies as near as can be ascertained has its southern limit in the vicinity of Colorado Springs, where Mr. C. E. Aiken, the discoverer of *Megascops asio aikenii*, considers them as regular winter residents, being replaced from there south by *M. a. aikenii*. Both Dennis Gale and W. W. Cooke state that *M. a. maxwellæ* rarely ascends higher than 6000 feet, which would preclude the possibility of its extending more than a few miles up into the foothills, and the most easterly record is recorded by Cooke as "30 miles out on the plains", probably referring to the Loveland, Colorado, record of W. G. Smith. The northern limit, according to Bendire, is Fort Custer in southeastern Montana, which tho a very early record, I believe still stands. From this it will be seen that *maxwellæ* is strictly a foothills form, inhabiting a long, narrow strip of country running in a general north and south direction and closely adhering to the base of the eastern foothills of the Rocky Mountains.



YOUNG NEARLY FULL-FLEDGED ROCKY MOUNTAIN
SCREECH OWLS

Denver, Colorado.

A COLLECTING TRIP IN KOREA

By MALCOLM P. ANDERSON

I SHOULD like to give THE CONDOR a specific list of the birds seen and obtained by me in Korea, but owing to my own ignorance, and for other reasons, this is not possible, so I content myself with the following account of one of my journeys, with some indications of what the bird fauna is like.

On the 29th of October, 1906, I left Seoul for the region sixty or seventy miles northeast of there. I had heard that there was some forest out that way, and longed to find it. In company I had my Japanese assistant, Orii, and a Korean "boss." Four big and dirty coolies carried my outfit of food, blankets, traps, and ammunition for a month's collecting. The coolies had promised to travel twenty miles a day, and had been paid for a day in advance for that distance, but I saw soon after we started that they would not go so far, so at a village ten miles on our way I hired a fifth fellow. But this did no good; they went no faster. At nightfall we were but fifteen miles from Seoul. We had passed that day thru the small cultivated valleys, and barren, dry, and much eroded hills which surround the capitol. The only birds we had seen were a crow, some kites, and the magpie (*Pica rustica* I believe), which is very common in Korea.

Orii and I spent that night in a little room at a village inn. As in most such places the walls were of mud much blackened with smoke, and tapestried with sooty cobwebs; the floor was of mud and stones covered with oiled paper. The sole entrance was thru a little door which served as window too, being a framework covered with paper.

The following day I sent the coolies about their own business, and engaged two horses to carry my things. When he came to pack, the driver objected that there was too much for two horses; I must have three. This was not true, but as he refused to load all, I engaged a by-standing coolie to pack something, and that day we proceeded much faster.

About twenty miles from Seoul I noticed a decided improvement in the country. The pines and bushes on the hills became more plentiful, water more abundant, and the whole aspect less desolate. With the exception of one large gray shrike (*Lanius excubitor*?) I saw no new birds this day.

The morning of our third day out there was a slight rain, and I was powerless to get the horse driver to start, so we were compelled to wait for the rain to cease, which it did about noon. Then the driver wanted me to pay him for the previous day; but this I refused to do because I felt he intended to abscond as soon as he got his money. I paid his bill at the inn, but still he refused to go, but I held out, and at last we started at a good pace, and in the evening reached a village called Penchan, fifty miles northeast of Seoul. Nearby here I observed some high hills lightly wooded with pines in the canyons, and with some brush on the ridges. I determined to stop here a few days, and explore these hills. So we obtained the best room in the best inn, and unloaded our packs there. The room proved to be nine feet square, with a beam along one side, by way of shelf, which was just the right height to hit one's head against when one rose from a stooping position. We didn't stay long enough to accustom ourselves to that beam. This room was lighted by two doors. I found that by shoving my table close to one of them I could see well enough to skin, during the lightest hours, but the more satisfactory way was to skin by lantern-light in the evening. We lived on canned goods largely, but also

bought boiled rice from the inn, and made bannocks in the frying pan over a charcoal fire.

The commonest bird at Penchan was the species of *Emberiza* found in China and Korea; there were several other sparrows but I cannot name them; a nuthatch (*Sitta*) inhabited the pine trees, and a species of *Acredula* with a wholly white head was seen in the woods. About the bushes and tangled vines at edges of paddy fields we sometimes found large flocks of a little bird I called the "Rosy-tinted Tit." It is about the size of our Plain Titmouse, but with a longer, graduated tail. The ground-color of head and body is dull gray-brown, but in some lights it has a distinctly rosy tinge, especially on the breast. A thrush much like our robin was obtained, and a specimen of a blue flycatcher (*Tarsiger*). Some dippers (*Cinclus pallasii*) were seen, and one preserved. Going in bands of ten to twenty-five, was a gray magpie (probably *Cyanopica*). It has a blue-black head and is so shy that one seldom gets more than one chance to shoot at the flock. The same gray shrike mentioned above was seen several times here, and obtained. Other birds were the red-bellied woodpecker (*Dryobates subcirris*), a *Falco*, a *Circus*, and a small snipe.

On November 4th, I moved 15 miles northeast to a town called Kimhoa (which may be found on the best maps). I had been led to think that there was more woods there, but on arrival found only a small town with scarcely a tree in sight. We found, however, on exploration several hilltops grown with pines and oaks, and these we called, by courtesy, "the woods." At this new town we had better quarters, and were able to accomplish more. Altho most of our time was spent in trapping mammals, our chief object, we secured a number of birds in addition to those taken before.

A small red-bellied woodpecker (*Dryobates japonicus*), a green woodpecker (*Picus canus*) and a small black-and-gray woodpecker (probably *Dryobates*) were found here. Also a ptarmigan (*Lagopus*) and some mallard, which we used to persuade the Japanese garrison to let us have some charcoal. Then there was a hawfinch (*Coccothraustes*), a purple finch (*Carpodacus*), and a greenfinch (*Chloris?*). One day Orii brought in an eagle (*Aquila*); and a waxwing (*Ampelis*), a wren (*Troglodytes*), and the creeper (*Certhia familiaris*) were among the additions to the collection.

In some valleys I occasionally saw cranes (*Grus* sp.) but did not try to secure them. Once I saw a large white swan which I suppose was *Cygnus musicus*. Later these swans became plentiful and were on sale in the markets at Seoul, Fusan, etc. At Kimhoa geese (*Anser segetum?*) were often seen flying over. Later when I was farther south they became very abundant indeed along the larger streams. Korea is a paradise for the duck and goose hunter. A little quail (*Coturnix*) was seen once or twice, but not secured in this locality; and one of the very commonest birds was the Siberian tit (*Parus* sp.). At the end of November we forsook this part of Korea and went southward.

The Koreans are a kind, simple-hearted, and hospitable people. They are uneducated it is true, but not so ignorant as some would have us think. They generally treated me as if I were a prince.

Chefoo, China.

THE GAMBEL PARTRIDGE IN CALIFORNIA

By M. FRENCH GILMAN

IN response to a query in a recent CONDOR concerning the western limit of the range of *Lophortyx gambeli*, I will give some of my observations.

Beginning at Fig Tree John's place, 197 feet below the sea level, as the most easterly point of my quail hunting I found the birds very numerous all over the western part of Salton sink. At Mecca, Thermal, Coachella and Indio, settlements in the Coachella Valley all below sea level, the birds are very common and do considerable damage in the vineyards. Along the southwest part of the valley next the Martinez Mountains are the Indian villages of Agua Dulce, Alamos, Martinez and Toros, where the birds seem more numerous, if anything, and much tamer, as the Indians hunt them very rarely. The dense mesquite and screw-bean thickets provide a safe retreat and with the Crissal Thrasher and Abert Towhee they form a happy, if hot, family.

At Indian Wells, near the rim of the ancient sea, I saw a few flocks of this quail. Here they must go some distance for water as the well is the only known supply for several miles. But the birds may have their own source of liquid refreshment as I saw other species there; such as Leconte Thrashers, Abert Towhees, Phainopeplas, Saint Lucas Woodpeckers and Plumbeous Gnatcatchers.

At Palm Springs, altitude about 500 feet, *gambeli* is thoroly at home in the screw-bean and paloverde thickets. They are much hunted here and develop a faculty of escaping, that disgusts and baffles the hunter. A big flock is seen and pursued. They divide and Nimrod follows the larger portion which again divides and this process of elimination by division continues till the hunter finds he has been up against a vanishing fraction. If near a range the flock immediately takes to the hills and anyone who has once followed them up those sun-burned rocks is ever afterward in the sour grapes class.

From the old sea level westward, the desert gradually narrows and the altitude increases till San Gorgonio Pass is reached, altitude 2500 feet. W. G. Wright of San Bernardino has termed this northwest arm of the Colorado Desert a cornucopia, and from a naturalist's standpoint the name is well deserved. A former San Bernardino journalist, Kearny by name, once dubbed it a continental funnel, from the atmospheric activity sometimes displayed there. At suitable points along this narrowing arm of the desert are found small colonies of the Desert Quail as it is commonly called. At Whitewater they breed regularly and are found occasionally, or even regularly in small numbers, to within three miles of Banning, or six miles east of the San Bernardino meridian. Banning seems the extreme western limit of their range; at least I have no knowledge of any seen west of that point. Here the characteristic desert plants such as *Yucca baccata*, *Dalea californica* and *Dalea schottii*, *Larrea mexicana*, and various cacti, give way to a more civilized flora.

To the north of the Coachella Valley is the Morongo range of mountains, the desert continuation of the San Bernardino range and separating the below-sea-level desert from a higher district which merges into the Mojave desert to the north. In this range the desert quail are found and all along the north desert slopes of the San Bernardino range as well, to nearly, if not quite, the San Bernardino meridian. At such points as Mission Creek, Morongo, Warren's Well, the "Pipes," Rattlesnake Canyon, Burn's Canyon, and Old Woman Springs the Gambel Partridge is at home. At points across the range north of Salton in the mining districts at

Twenty-nine Palms and Virginia Dale, as well as others toward Palo Verde and the Colorado River, is found this quail.

They range upward to at least 4000 feet and at favorable points are found in proximity to the Plumed Partridge (*Oreortyx pictus plumiferus*). At other places the Valley Partridge (*Lophortyx californicus vallicola*) joins in and the three species occupy the same territory. At Snow Creek at the north base of San Jacinto Peak I have shot the three species and carried them home in the same bag. Near Banning mixed flocks of *gambeli* and *vallicola* have been seen and the Plumed, or Mountain Quail as it is more commonly called, only a short distance away. In canyons at Palm Springs the three can be found, and on Pinyon Flats, altitude of 4,000 feet, lying about fifteen miles south of Palm Springs, I have seen the three species drink from the same spring in course of half an hour.

I have heard of hybrids between *gambeli* and *vallicola* being shot near Whitewater but know nothing positive about it. I have shot Valley Quail at Whitewater and at Palm Springs very light in color and with top of head approaching the red of *gambeli* but with none of the distinctive breast markings. Desert surroundings might account for the variation from type. Or perhaps a cross between the two would not be a true hybrid and by mating with the California side of its parentage most of the *gambeli* markings would be lost. I should like expert opinions as to the possibility of a cross between *L. gambeli* and *L. vallicola* proving fertile instead of hybrid. The structural differences seem slight or *nil*, and coloration so much a matter of environment. The same question has been discussed in THE CONDOR concerning hybrid Flickers and no conclusion arrived at. But it seems to me that experiments with the partridges could be easily made and something definite learned. I have had Valley Partridges lay eggs in captivity; and with big enough enclosures, experiments with the two species should yield results.

Shiprock, New Mexico.

NESTING OF THE BI-COLORED BLACKBIRD

By H. F. DUPREY

EVERY collector living near a tule marsh is well acquainted with one of our most common birds, *Agelaius gubernator californicus*. Seven miles west of Santa Rosa, California, lies the Lagoon, grown with tules, weeds, water lilies, willows, etc., a tangled mass of swamp. For several years past I have paid this swamp a visit to gather tribute in the way of the eggs of the Bi-color. While Davie in his "Nests and Eggs" says that the nesting habits of Bi-color "are exactly the same as the eastern Redwing" (*Agelaius phoeniceus*) the nests being placed in water-cress or rushes along running streams, ditches and swamps, in this lagoon I speak of I have in most cases found the nest fastened to three or four stalks of tule 18 to 24 inches above the surface of the water. Then again I have found the nests fastened to young willows growing along the banks of the lagoon. In Solano County I have found a great many nests attached to wild mustard growing in the grain fields several miles from any body of water. This wild mustard grows in patches in the fields, and in a space of 40 or 50 feet square grown up with mustard it is quite common to find seven or eight pairs nesting. It is also common to find nests in low swales in the fields that carry water in the winter and spring and

grow up with wire grass in April and May. Where nests are found here they are usually lower down, sometimes within ten or twelve inches of the ground.

I was fortunate on May 5, 1903, to find two nests of the Bi-colored Blackbird in oak trees, both southwest of Santa Rosa. The first one was in a large oak on the bank of a small creek in a grain field. Tho the usual wire grass and a few tules were growing along the edge of the water, this pair of birds built their nest on one of the lower limbs of the oak, seven feet above the ground out at the very end of the limb on a small crotch and fastened to the small growth and leaf stems. The nest was built of the usual material and lined the same. There were four eggs, the female was flushed from the nest, and the male bird was in another part of the tree.

About three miles more to the southwest and at the southern extremity of the same lagoon I mentioned before, I found another nest of Bi-color in an oak tree. This was a more interesting nest even than the other. It was situated in the very top of the tree; in fact the nest was fastened in the uppermost fork of the main part



NEST OF BI-COLORED BLACKBIRD IN TOP OF OAK
HUNG WITH LICHENS

of the tree, $2\frac{1}{2}$ feet from the very top point of the tree and 20 feet from the ground. It was a mass of tree moss and well concealed. The nest was of the usual material, eggs four in number and typical of Bi-color. The flushing of the female was what located the nest. The tree was at the very edge of the water, and was leaning over the water so that when I was in the top of the tree I could have dropped into the water three feet from the bank. After taking the eggs, I cut the top of the tree off about twelve inches below the nest. I still have this nest and set, and also have had it photographed. [Reproduced herewith.]

Davie speaks of Mr. I. E. Hess of Philo, Ill., finding the nest of Redwing in a wild cherry tree and

of unusual material; also a half mile from open water. The two nests I speak of were both built of the usual material, and both very close to where the Bi-colors most always nest. In fact the water and the nesting sites were there in both instances, but the birds selected the oak in preference. Why? I have come to the conclusion that it was to elude that enemy of most nesting birds, the California Jay, as in both instances the grass and tules at the water's edge were quite sparingly grown up and very open. I have also noticed that in the thick tules the nests were mostly placed in those growing at the edge of the little avenues of water running thru them. On same date as finding the two sets in the oak trees I also found one set of four eggs the nest of which was fastened to the tall grain stalks in a large grain field $\frac{3}{4}$ of a mile from the place where I found the first nest of Bi-color in the oak, which was the nearest water and 200 yards from the road. I located the nest by seeing the female settle down, and on going to investigate found the nest and eggs.

Davie's "Nests and Eggs" and Bendire's "Life Histories" both make only one description of the eggs of the Bi-color; namely, light blue or bluish white, marked around the larger end with waving lines of dark brown, lighter in shade than the markings on the eggs of the common Red-wing (Davie). "The eggs are two to four in number (very rarely more), and resemble those of the Red-wing Blackbird excepting that they are a trifle smaller and perhaps on an average less heavily marked, but otherwise the same description will answer for both" (Bendire); also only two types given on Plate VI.

I have in my collection a set which is typical of the Bi-colored Blackbird. Also a set of four eggs, which are not marked at all, only plain ground color showing, and another with plain ground color, at larger end quite a bit darker, and with only one or two very faint and small dark lines showing. On the whole I think that this blackbird is a very interesting subject of study, and tho it is somewhat common much can be learned by studying the common birds, as well as those that are less familiar.

Santa Rosa, California.

NOTES ON THE PALLID WREN-TIT

By WRIGHT M. PIERCE

THE Pallid Wren-Tit (*Chamæa fasciata henshawii*), a little bird with a brown-colored back and wings, and a buffy colored breast, lightly streaked with gray, so common on the brush-covered slopes below the foot-hills and even well up into the mountainous districts about here, has always seemed a very interesting little subject of bird life to me. With his long tail, common to members of the tit family, and his wren-shaped body, he is unique, showing some characteristics of both wren and tit families. The lower foot-hills and the mesa regions are the favorite haunts of this bird, altho we meet with him at higher altitudes but with somewhat less frequency the farther up we go. But even tho the lower haunts of this bird are very accessible, this little fellow seldom appears to the casual observer of bird life, for usually the moment you approach he hops off into the surrounding sombre-colored sage which is in exact harmony with his plumage. Then very likely in a moment, from some bush or tree not far away, you hear again his call; but on drawing near to the latest retreat of this unobtrusive little bird, the song suddenly ceases and by the time you have arrived the source has likely disappeared again. However I do not wish to have it understood by these remarks that this bird is especially wild or wary; quite the opposite, for he seems to slip away in no hurry and in such a matter of fact way, simply going slowly from branch to branch of some bush, diligently seeking small insects, seeds and grubs that are his food. Then by a short quick flight he is away to the next bush. He, without doubt, relies upon the protective color of his plumage for his escape from his enemies, and incidentally from those who wish to observe his actions.

Chamæa fasciata henshawii, as the scientist calls him, must nest commonly about here, for the birds are met with as frequently during the nesting season as at other times of the year; in fact, they are more in evidence during the mating season than at other times because of their distinctive whistle-like song, which is uttered then with more frequency. This song or whistle, tho perhaps not very musical, seems very fitting and appropriate with the surroundings, from which it is uttered: the lonely chaparral-covered canyons and gulches of our foot-hills and lower ranges, or the broad expanse of brown-colored brush, or, perhaps, farther up in the higher

and thicker brush and buckthorn on the steeper ridges of the rugged mountains. These birds are not like the Western Mockingbird and some of our other birds which are silent for several months during the year, for their call can be heard at intervals by the bird student on a calm cloudy day in winter as well as on a bright warm sunlit morning in spring, but not with such frequency.

But to return to the nesting habits, of which I feel that I really know very little as I have never found many of their nests. The few that I have discovered were back in the mountains north of here. The notes that I have of one found last year are interesting. On May 15, while on a fishing trip near Dell's Camp (altitude about 4500 feet) in San Antonio Canyon (and I might say that I caught thirty-five beauties that day), I came across a nest of this little bird. It was situated among thick branches and near the top of a scrub oak bush perhaps two and a half feet up, and is a gem of bird workmanship, composed, as it is, of bleached weed fibres such as fine grasses, an abundance of soft plant down, a little weed bark, and fine hairy threads of bark of the yucca plant, with a few wider blades of grass intermixed and woven about thru the whole thick-walled structure. A thick mat of horse hair makes the lining. To more firmly bind and hold together the nest, which even without would have been unusually strong and serviceable, these ingenious little birds used cobwebs as an outer covering to make their house doubly strong. The dimensions of the nest are: Depth, outside, five inches; inside, two inches. Diameter, outside, four inches; inside, two inches.

As the bird flushed from her three fresh eggs she fell to the ground where she remained for a few moments fluttering about and uttering a hissing sound intermingled with sharp croaks. Then seeing that I could not be enticed from her home she flew up into a small bush and gave forth her whistle call, and very soon Mr. Wren-tit joined his mate in her song. Since on the next morning when I approached the nest again the bird went thru these same actions I feel that I am safe in saying that they are very characteristic of the nesting Wren-Tit.

On every spring day that I have been in the haunts of this bird, I have been looking for a chance to observe more of its home life; but, so far, I have not been very successful in locating the nests, probably because of the skill with which the birds conceal them among the thick bushes. But as I wander about, even tho I do not find any of the Pallid Wren-Tit's nests, I am able to observe and study one or another of the numerous nature subjects which are found so abundantly in our Southern California fields—the sweet voiced birds, with their peculiar habits and different songs, the many colored and shaped insects, and the brilliant and sweet-scented flowers; so that for any time that I spend in such pursuits I always feel well repaid.

Claremont, California.

SOME BIRDS OF SOUTHWEST COLORADO

By M. FRENCH GILMAN

HAVING spent a little more than a year in southwest Colorado—to be exact, from December 23, 1905, to January 31, 1907—I contribute to THE CONDOR what few bird observations I was able to make. My base of operations was Fort Lewis, an Indian school located in La Plata County at an altitude of about 7,500 feet. Unless otherwise stated, all records refer to this place.

Mr. E. R. Warren of Colorado Springs kindly furnished me with some data

from the counties of Montezuma, Montrose and San Miguel, which is specified as it occurs in the text. My location was unfavorable for water birds so no account is taken of them.

Fort Lewis school is situated on a terrace a few feet above the La Plata River. On each side of the river is a more or less level mesa covered with a growth of pine (*Pinus flexilis*), pinyon (*Pinus edulis*), juniper (*Juniperus occidentalis*) and scrub oak (*Quercus undulata* and *Quercus u. gambeli*). The river bottom sustains a heavy growth of narrow-leaf cottonwood (*Populus angustifolia*), black birch (*Betula occidentalis*), paper-leaf alder (*Alnus tenuifolia*), two kinds of willow, some aspens (*Populus tremuloides*), a few pines (*P. flexilis*), and an occasional blue spruce (*Picea pungens*). Two trips were made to the top of the La Plata Mountains, something over 13,000 feet elevation, and vegetation already noted was found to gradually give way to more of the blue spruce and aspen.

I am indebted to ex-Supt. W. M. Peterson and Supt. J. S. Spear, of the Fort Lewis School, for opportunity for study and observation. The list is by no means complete but may prove of interest to some CONDOR readers.

Dendragapus obscurus. Dusky Grouse. Said to be common on the north slopes of the La Plata Mountains. I picked up a dead one December 20, on the snow near La Plata City, altitude 10,000 feet. It had been partly eaten, by an owl, perhaps.

Pediocetes phasianellus columbianus or **campestris.** Sharp-tailed Grouse. A few scattered on the mesas at about 7,500 feet. Resident thruout the year. In winter their tracks are frequently seen on top of snow 3 or 4 feet deep. I have seen where they roosted in the snow—a short tunnel with two openings; apparently only one bird in each, however. Two birds secured had crops full of acorns. The greatest number seen was a flock of 18, the usual number being 6 to 10. On May 11, 1906, Mr. W. M. Peterson found a nest containing 11 eggs, situated on the ground under a small scrub oak. He drove over the bush in a buggy but the nest escaped harm. Not so the brood, however, which hatched two weeks later; for an Indian killed the mother before the young were old enough to shift for themselves. The nest-cavity was lined with grass and feathers. I identified two birds secured as variety *campestris*, but afterward noting what Cooke's "Birds of Colorado" had to say on the subject I became uncertain. They are now in California and must await authoritative identification.

Zenaidura carolinensis. Mourning Dove. Not numerous at this altitude. A few noted in summer. Several seen in January near Navajo Springs on the Southern Ute reservation near the New Mexico line, altitude about 5,500 feet. Probably a few winter there. Mr. Warren reports them near Cortez April 8, and common at Coventry, Montrose County, about April 20.

Meleagris gallopavo merriami. Merriam Turkey. Mr. Warren tells me that C. H. Smith of Coventry saw a turkey, probably this variety, in January, 1899, in San Miguel Canyon and heard of them a year or two later in the same locality. While down in the Navajo reservation in New Mexico I helped eat two wild turkeys killed by Indians in the Carriso Mountains, somewhere near the Four Corners. They sold them to a post trader but had all the feathers picked off before bringing them in. I was not expert enough to identify the subspecies after they had been brought on the table but judged they were hatched at least five years before before being bitten into.

Circus hudsonius. Marsh Hawk. Seen once near the New Mexico line. Mr. Warren reports it at Cortez in April.

Cathartes aura. Turkey Vulture. An occasional buzzard was seen floating along in spring and summer, but I saw no signs of nesting.

Accipiter velox. Sharp-shinned Hawk. Only two seen.

Accipiter cooperi. Cooper Hawk. Probably six seen during the season.

Buteo borealis calurus. Western Red-tailed Hawk. A few breeding in the locality.

Buteo swainsoni. Swainson Hawk. One seen occasionally.

Aquila chrysaetos. Golden Eagle. Only one seen.

Falco mexicanus. Prairie Falcon. One seen in the fall.

Falco sparverius. Sparrow Hawk. Common, nesting in deserted flicker and Lewis woodpecker holes. Saw sets of from 3 to 5 eggs during the latter part of May. One bird noticed in January. Mr. Warren says it is common in Montezuma County, and at Coventry.

Strix pratincola. Barn Owl. One seen near Mancos, and one often seen at a barn half a mile below Fort Lewis.

Asio wilsonianus. Long-eared Owl. More numerous than the other owls. Breeds in deserted magpie nests. Found set of 4 eggs April 25.

Syrnium occidentale. Spotted Owl. Two seen in the spring.

Megascops flammeola. Flammulated Screech Owl. I saw one of these little owls in a black birch one morning, but did not secure it.

Bubo magellanicus pallescens. Western Horned Owl. Heard frequently, but seen rarely. Resident.

Speotyto cunicularia hypogæa. Ground Owl. I saw one below Cortez, and Mr. Warren reports one from Cortez.

Glaucidium gnoma. Pigmy Owl. I found a dead young one in a deserted flicker's nest.

Ceryle alcyon. Belted Kingfisher. Two seen during the season.

Dryobates villosus monticola. Rocky Mountain Hairy Woodpecker. Fairly common resident, tho not seen unless quietly looked for.

Dryobates pubescens homorus. Batchelder Woodpecker. Seen occasionally along the river bottom.

Sphyrapicus varius nuchalis. Red-naped Sapsucker. Their "drawn-work," on birch and alder trees, was noticed frequently. One pair raised a nest, of young just outside the school grounds in a tall cottonwood tree.

Melanerpes torquatus. Lewis Woodpecker. Saw four pairs during the spring. I found a nest completed in a dead pine tree, but when I returned, a few days later, woodcutters had felled the tree. Another pair nested in a pine tree a short distance from Mr. Peterson's "rubber camp" and raised a brood of four.

Colaptes cafer collaris. Red-shafted Flicker. Numerous along the river bottom, and some on the pine mesas. Mr. Warren reports them from Montezuma County and Coventry in Montrose County.

Phalænoptilus nuttalli. Poor-will. An occasional Poor-will was seen at dusk along the roads. None heard.

Chordeiles virginianus henryi. Western Nighthawk. Seen in flocks of 10 to 30 several evenings, probably migrating.

Aeronautes melanoelucus. White-throated Swift. Seen once in the La Plata Mountains.

Selasphorus platycercus. Broad-tailed Hummer. Four or five seen during the year. One caught.

Tyrannus tyrannus. Kingbird. One seen on a wire fence at Navajo Springs in June.

Tyrannus verticalis. Arkansas Kingbird. Five seen one day and none afterward. Probably stragglers to that altitude.

Tyrannus vociferans. Cassin Kingbird. A pair nested on the Fort Lewis mesa.

Myiarchus cinerascens. Ash-throated Flycatcher. One seen in spring.

Sayornis saya. Say Phoebe. Common, nesting on porches. Mr. Warren saw them at Coventry, and in Montezuma County.

Contopus borealis. Olive-sided Flycatcher. A few seen.

Contopus richardsoni. Western Wood Pewee. Two seen during the spring.

Empidonax hammondi. Hammond Flycatcher. A few noticed and one nest found.

Otocoris alpestris { *leucolæma* } Horned Lark. Just what part of our alphabet
 { *arenicola* } to annex here I do not know. I saw horned
 { *arcticola* } larks in the spring between Cortez and

Navajo Springs. In winter I saw flocks of them at 9500 feet in the La Plata mountains. I secured a few specimens but they were accidentally destroyed. The summer birds I placed as *leucolæma* and the winter birds as *arcticola*.

Pica pica hudsonica. Black-billed Magpie. Found along all streams in southwestern Colorado.

Cyanocitta stelleri diademata. Long-crested Jay. Numerous at and near Fort Lewis during winter of 1906. In 1907 up to January 31, only three were seen. Three pairs nested on the Fort Lewis mesa, but most of them went to higher altitudes. Early in May I found a nest near the end of a limb of a pine tree. It was about 10 feet from the tree trunk and 15 feet from the ground. May 13, the bird, a close sitter, was flushed from the nest and four eggs uncovered, one slightly cracked. Nest similar in construction to that of the Blue-fronted Jay. June 24, I saw young birds, just from the nest, at 10,000 feet altitude in the La Plata Mountains.

Aphelocoma woodhousei. Woodhouse Jay. Very numerous during months of January, February and March, 1906. All except one bird disappeared during April. I saw none during the nesting season. Up to January 31, 1907, none were seen except two down the La Plata River near the New Mexico line.

Perisoreus canadensis capitalis. Rocky Mountain Jay. Seen only at timber line on the La Plata Mountains, and not common there. Saw a pair, with four young, flying about searching logs and fallen trees for food. Young were very tame but adults shy. This was on July 22.

Corvus corax sinuatus. American Raven. A few spent the winter at Fort Lewis sharing with magpies and crows stolen scraps from the pig-pen. Two or three pairs seen during the breeding season but no nests found. Mr. Warren states that they are common at Cortez and Coventry.

Corvus americanus. American Crow. Common all winter and a few seen in spring and summer tho no nests found. Some of the birds were quite tame in severe weather. Mr. Warren reports them common at Coventry at times in the fall.

Nucifraga columbiana. Clark Nutcracker. Occasionally noticed in the winter. March 11, 1906, I saw a pair in Pine Gulch about two miles west of Fort Lewis and at about the same altitude. One of them was busily engaged in assaulting a pair of Red-tailed Hawks that sat in the top of a dead pine tree. More than a foot of snow covered the ground at this time. May 1, I saw in the same locality a pair of nutcrackers accompanied by three young ones. They followed the old birds begging for food in tones that could be heard half a mile or more. I saw them again a week later, discovering them both times by the vociferous begging of

the young birds. In June I saw several of the birds above timber line in the La Plata Mountains.

Cyanocephalus cyanocephalus. Pinyon Jay. Several small flocks seen during early spring. Seemed always on the go. Mr. Peterson told me he saw young birds in the Carriso Mountains, near Four Corners, during the month of June. Mr. Warren says the birds are common residents at Coventry.

Molothrus ater. Cowbird. A few noticed with Brewer Blackbirds in the spring. I found an egg in a nest with two eggs of the Tolmie Warbler. In summer an immature bird was sometimes seen with the blackbirds.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Two seen at Fort Lewis and a small colony were apparently nesting in a pond of tules near Cortez.

Agelaius phœniceus. Red-winged Blackbird. Not uncommon, nesting in small willows.

Sturnella neglecta. Western Meadowlark. Several noticed during nesting season and a few found in January near Cortez.

Icterus bullocki. Bullock Oriole. Two pairs nested at Fort Lewis in the season of 1906.

Scolecophagus cyanocephalus. Brewer Blackbird. Numerous during the breeding season and for a few weeks afterward. First one arrived April 11. They nested in willows, pines and scrub oaks, and, most surprising to me, on the ground. Three nests were discovered so situated: one in a deep horse track at base of a clump of grass; another at base of a small wild rose bush, and the third under a bushy wild cherry. After nesting was over the birds, old and young, congregated in flocks and made war on the multitude of grasshoppers infesting the alfalfa fields.

Carpodacus cassini. Cassin Purple Finch. Two seen April 22 and three a week later.

Carpodacus mexicanus frontalis. House Finch. Two seen on the La Plata River about ten miles below Fort Lewis in October, and a pair seen near Cortez in May. Mr. Warren saw them at Ashbaugh's ranch in the McElmo Canyon country.

Loxia curvirostra stricklandi. Mexican Crossbill. A female seen May 13, on Fort Lewis mesa, and a pair seen just below timber line on the La Plata Mountains, July 22.

Leucosticte australis. Brown-capped Leucosticte. Two seen January, 1906. A pair seen on summit of the La Platas June 24, and July 22 a pair seen and young heard faintly calling, near the same spot. In January, 1907, about a dozen remained around Fort Lewis several days.

Astragalinus tristis pallidus. Pale Goldfinch. Several seen from April 29 on during the season. Apparently nesting tho none found.

Astragalinus psaltria. Arkansas Goldfinch. Seen two or three times; not common and apparently not breeding.

Spinus pinus. Pine Finch. Seen first on March 30, becoming numerous soon after. About June 1, they nearly all left. On June 24 I found them quite common at 10,000 feet in the mountains.

Passer domesticus. English Sparrow. A flock of 25 or 30 stayed all winter about the barn and corral at Fort Lewis in 1906, four or five pairs remaining to breed. In the winter of 1907 the number was about doubled. Mr. Warren reports them at Cortez, and at Durango they fairly swarm.

Calcarius ornatus. Chestnut-collared Longspur. Mr. Warren secured one at Cortez, April 5, 1906.

Poœcetes gramineus confinis. Western Vesper Sparrow. First seen April 3,

soon becoming common. Nest and five eggs found May 6. Mr. Warren says they appeared about April 15 in Montezuma County.

Chondestes grammacus strigatus. Western Lark Sparrow. A few seen during the nesting season. Not common.

Zonotrichia leucophrys. White-crowned Sparrow. A number seen during early spring, and a pair seen all thru nesting season tho no nest located. Two pairs seen in a mountain meadow just below timber line.

Zonotrichia leucophrys gambeli. Gambel Sparrow. Seen during migration. Mr. Warren reports it from the McElmo district, April 13.

Spizella monticola ochracea. Western Tree Sparrow. Several seen during the winters of 1906 and 1907.

Spizella socialis arizonæ. Western Chipping Sparrow. Abundant. Found nesting at Fort Lewis, Cortez and Navajo Springs.

Junco hyemalis. Slate-colored Junco. One seen several times during March, 1906, and another seen in January, 1907.

Junco hyemalis connectens. Intermediate Junco. Numerous all winter.

Junco mearnsi. Pink-sided Junco. Abundant during the winter months, leaving about the second week in April. A partial albino secured.

Junco caniceps. Gray-headed Junco. Numerous at Fort Lewis during winter and early spring. Seen at timber line in July.

Amphispiza bilineata deserticola. Desert Sparrow. Seen in the La Plata River valley near the New Mexico line and at Navajo Springs. Mr. Warren saw the bird in the McElmo district in April.

Amphispiza belli nevadensis. Sage Sparrow. Seen near Navajo Springs. Mr. Warren reports it as taken at Coventry.

Melospiza melodia montana. Mountain Song Sparrow. Three seen in the spring of 1906 at Fort Lewis.

Melospiza lincolni. Lincoln Sparrow. One secured at Fort Lewis.

Passerella iliaca schistacea. Slate-colored Sparrow. Three seen in the spring of 1906.

Pipilo maculatus arcticus. Arctic Towhee. Several noted in January and February, 1906.

Pipilo maculatus megalonyx. Spurred Towhee. Nesting abundantly all over the mesas, and among scrub oak, wild roses and wild cherries.

Pipilo aberti. Abert Towhee. Between Cortez and Navajo Springs I saw what I believed to be this bird but had no gun with which to secure it.

Oreospiza chlorura. Green-tailed Towhee. Arrived April 28 at Ft. Lewis. Nested on the mesas in bushes usually near a small stream.

Zamelodia melanocephala. Black-headed Grosbeak. Arrived May 15. A few nested in the locality.

Cyanospiza amœna. Lazuli Bunting. Rather common, nesting in the small wild cherry shrubs and in the wild roses.

Calamospiza melanocorys. Lark Bunting. Seen from near Cortez to Navajo Springs in May. A nest found at Navajo Springs, June 1, contained four fresh eggs and a broken one just outside the nest. This was beneath a clump of grass and quite similar in appearance and location to that of a Lark Sparrow. The birds were quite numerous and not at all wild. The flight song is very pleasing, the bird flying upward at an angle approaching 50° and then fluttering slowly to the ground uttering his song nearly the whole time he is in the air. Six or eight of the oddly colored males in the air at once going thru their maneuvers is something worth seeing, and possesses a fascination for one.

Hirundo erythrogastra. Barn Swallow. Seen at Ft. Lewis and found nesting at Cortez.

Piranga ludoviciana. Western Tanager. Not common; breeding.

Stelgidopteryx serripennis. Rough-winged Swallow. Seen a few times.
(*To be concluded in November*)

THE RUFOUS-CROWNED SPARROW IN SAN DIEGO COUNTY, CALIFORNIA

By NELSON K. CARPENTER

IT was another one of those dark foggy mornings that were so plentiful last spring in southern California. I was standing on the east slope of a steep gulch watching a pair of Costa Hummers feeding their two fully grown young. I stepped to one side to get a better view but in doing so startled something in the grass about five feet away. Catching a glimpse of a small brown object as it shot into the thick brush ahead I completely forgot my hummingbirds.

Whether it was bird or mammal I could not tell. My first guess named it a wood-rat but a moment's reflection changed my mind. It must be a bird. Perhaps a Spurred Towhee. I parted the weeds and almost the first thing I saw was a nest containing three fresh "white" eggs. Not a Spurred Towhee but probably a Rufous-crowned Sparrow. I waited for a few minutes but did not get another glimpse of the bird.

My next visit to the gulch was made on June 2, just four days after I had first found the nest. I wound my way thru the thick brush as quietly as possible, but when I came to the nest the sparrow was gone, and all looked just as I had left them. My hopes vanished. Yes, a valuable find but probably an incomplete sett and uncertain identity. I took several exposures with a kodak and went to the other side of the ravine to await the uncertain. It was fully half an hour before I saw anything encouraging. The sun was getting hot and I was pretty well disgusted, when of a sudden two sparrows came flying over the hill and lit in a sumac bush about forty feet from the nest. They did not make a sound but quietly plumed their feathers. Finally one of them slipped to the ground and disappeared. About two minutes later it reappeared in the top of a bush about ten feet nearer the nest, but quickly slid down the stem into the grass and was again lost to view. This was repeated at least half a dozen times, the bird having completed almost a semi-circle around the nest, but at the same time drawing nearer. Finally its last survey of the country was taken from a small bush about three feet from the nest. This time she did not climb to the top but only about half way up. She stayed but a moment and was again lost from view. A few seconds and I saw her standing on the edge of the nest looking at its treasures. She slipped on and completely hid from sight. All this time her mate did sentinel duty from the top of the sumac, which was just out of reach of my light charges of dust shot.

I thought it was my next move, but while figuring the surest way by which I might collect her, Mrs. Sparrow appeared on the edge of her nest and quietly slipped away to her nearest outlook. I shot quickly but she was quicker, for all I could find upon crossing the gulch was broken twigs. Her mate was gone also and I was just where I had been an hour before, only with the birds badly scared and perhaps one injured.

All I could do was to recross the gulch and wait. Another half-hour of blazing heat and my sparrows came over the hill and alighted in the same bush as they had done on their former visit. I waited to make sure that these were my birds and while doing so saw their first performance entirely repeated. This time, however, I had better success for I secured the female just after she left the nest, proving the species to be the Rufous-crowned Sparrow (*Aimophila ruficeps*). Dissection showed the set to be complete.

The eggs, upon blowing, proved to be slightly incubated and also had a very distinct bluish color, spoken of by the late Chester Barlow (CONDOR, Vol. IV, page 109). In fact they were nearly as blue as Arkansas Goldfinch eggs but have since faded considerably even tho kept in the dark. They measure as follows: .74x.61, .74x.62, .71x.62 inches.

The nest was placed at the foot of a bank which was about a foot high. A small bush which had grown on top of the ledge had died and fallen over making



NEST AND EGGS OF RUFIOUS-CROWNED SPARROW

a miniature brush pile. Into this the birds had broken their way using the fine twigs of the bush as a foundation for the nest. This mat of twigs was nearly two inches wide on the front side of the nest and entirely lacking where the nest touched the bank. The nest itself was made of very fine dry yellow grass with considerable black horse hair in the lining. The inside dimensions of the nest are one and a half inches deep by two and three-quarter inches across. The mat of twigs around the exposed edges was so interwoven with the surrounding bush that it was hard to tell exactly where the nest began.

Last year a friend collected a set of four eggs of this species near San Diego, on May 13, in which incubation was complete in three, the fourth being addled. The nest was on the ground and made entirely of grass. The eggs were slightly larger than the set just described and a very much paler blue.

Escondido, California.

THE CONDOR FIFTY YEARS AGO

By C. S. SHARP

IT was recently my good fortune to secure a work that is probably little known to most of the present day ornithologists. This is the "North American Oology," by Dr. Thos. M. Brewer, one volume only, published by the Smithsonian Institution in 1857. It is somewhat of the nature of Bendire's "Life Histories," the size and general make-up being the same, but necessarily much abbreviated. It comprises 112 pages of text with preface and addenda, table of contents, "Catalogue of the Species of Birds inhabiting North America north of Mexico" (as contained in the volume), index, and five pages of lithographic plates, illustrating the eggs of fifty-one species, seventy-four eggs in all being shown.

These plates are very fine, being only slightly inferior to the splendid illustrations in the "Life Histories."

In the preface Dr. Brewer says: "The present part embraces the descriptions and illustrations of the eggs of the Order Raptores and of the Tribe Fissirostres of the Order Insessores. So far as he (the author) is at present aware, these include seventy-nine species inhabiting North America. Of these the eggs of no less than twenty are still entirely unknown to him, while of those of eleven others he has no present means of giving illustrations." In this connection it will be of interest to note that our present list contains fifty-eight recognized species of Raptores and some thirty-nine subspecies. Dr. Brewer in his catalogue gives fifty-nine, several of which have been since discarded or given sub-specific rank. Of the Insessores, families Caprimulgidæ, Hirundinidæ and Halcyonidæ he gives twenty species. Our list contains the same number of species and thirteen subspecies for these three families.

As may be readily understood the facilities for obtaining accurate data fifty years ago were extremely limited, and access to large series of eggs and nests was not possible as at the present time. Eggs of many species that we now consider fairly common were then unknown. In many instances Dr. Brewer's descriptions are from single eggs only, or from hearsay, or from drawings of eggs. One can readily understand the tremendous discouragements of scientific work under such circumstances, and it is not surprising that only the one volume was produced. As an instance of contradictory data and lack of it his article on the Condor is of interest, and is particularly so in view of Mr. Finley's most interesting papers. It is given without abridgment.

Cathartes Californianus.*(Eleven lines of synonymy)*

Vulg.—The Californian Vulture.

The California Turkey-Buzzard.

But one instance of the possession of a well-authenticated egg of this species by a naturalist has come to my knowledge. This was one laid in confinement by a female belonging to the Garden of Plants in Paris. An accurate drawing of this was taken by Dr. James Trudeau, and is now in my possession. There seems no reason to doubt that the egg thus laid does not essentially vary from those deposited in a wild state. It certainly is hardly possible that the variations between this and the natural egg can be so total and striking, as between it and the attributed shape and markings of the eggs of this species, if we credit the previous accounts which have been given of the eggs of the Californian Vulture. These descriptions are, however, all traceable to one source, so far as I am aware. David Douglas, in the Zoological Journal, speaks of the eggs of

this Vulture as nearly spherical, JET-BLACK, and about the size of those of a goose.¹ Following this authority, all writers who have referred to the eggs of the California Vulture have described them in a similar manner. That they should be spherical would be an exceptional case to the whole genus, and is therefore hardly probable, though by no means impossible. Markings of a jet-black color, even to the extent of blotches, spots, or lines, are of very rare occurrence, if not positively unknown. Nor am I aware that any of this family of Vultures ever construct nests. For these reasons, and until the statements of Mr. Douglas can be confirmed by other testimony, I am inclined to discredit his accounts of its nest, eggs, and habits in every respect. In this unbelief I am in part confirmed by the testimony of Mr. Townsend. He was informed, as he tells us, by the Indians of the Columbia River, that the Californian Vulture, like all others of its genus, breeds on the ground, fixing the place for a nest in swamps, under the pine forests, chiefly in the alpine country,—in this conforming with the habits of the family.

The egg in the Garden of Plants corresponds, in its generic characteristics, with the eggs of the *Cathartes aura*, the *C. atratus*, and also with those of the *jota* and *brasiliensis* of South America. It is also remarkably similar, except in size, to occasional marked varieties of the egg of the Condor (*Sarcoramphus gryphus*) which, however, is usually white and unspotted. I feel justified, therefore, in accepting the drawing as an authentic representative of those of this species.

This egg measured $3\frac{1}{4}$ inches in length by $2\frac{1}{8}$ in its greatest breadth. Its ground color is that of all the known eggs of this genus, a rich cream-color, or a yellowish-white. A ring of reddish-brown confluent blotches surround the larger end, leaving the residue nearly free from markings. A few blotches of a smaller size and lighter color are distributed over the whole surface. The faint purplish-drab markings noticeable in the eggs of the preceding species (*C. atratus*) are not observable in this specimen.

The Californian Vulture is confined to the western slope of the Rocky Mountains. It is there found from the extreme southern portions of the Pacific coast of North America to Washington Territory and the British possessions, where it abounds in the summer season. It was met with by Mr. Townsend on the banks of the Columbia, upwards of five hundred miles above the mouth of that river, throughout the months of June, July, and August.

ADDENDA

Cathartes Californianus.—In Newman's "Zoologist" (Vol. XIII, p. 4633, 1855) occurs the following in reference to the nesting and eggs of the California Vulture. It is contributed by Mr. A. S. Taylor, of Monterey. I have given it with the view of putting on record all the statements and descriptions made public in this connection, though I do not think the account here given will be confirmed in all respects by more full and certain testimony. Mr. Taylor's information is, as may be seen, derived from the reports of others, and is therefore not so reliable as it would be if given from his own observations.

"The egg of the bird is three inches broad and five long, about one-third longer than a goose's egg. Its color is a dirty pale blue, spotted brown, and it is nearly as thick as an ostrich's egg. The same person informs me, that the female lays only one egg during the season, and makes her nest on the ground in the ravines of the mountains, and generally near the roots of the redwood and pine trees. It is three months before the young birds can fly."

Escondido, California.

FROM FIELD AND STUDY

Pointers for the Field Naturalist.—*Bamboo*.—To those who, like myself, make up skins with "sticks in 'em" I can recommend bamboo as the best possible wood for bird necks. It is also useful for extending broken legs in large birds. One end of a small piece is easily whittled down to fit tightly into the stump of the broken member; for mammal tails—*ne plus*

¹ "They build in the most secret and impenetrable parts of the pine forests, invariably selecting the loftiest trees that overhang the precipices on the deepest and least accessible parts of the mountain valleys. The nest is large, composed of strong thorny twigs and grass, in every way similar to the nests of the eagle tribe, but more slovenly constructed. The same pair resort for several years to the same nest, bestowing little trouble or attention in repairing it.

They lay two nearly jet-black eggs, about the size of those of a goose. They hatch generally about the 1st of June, and the period of incubation is twenty-nine or thirty days."—(*David Douglas, Zoological Journal.*)

ultra. Bamboo is so light, strong, and straight-grained that it is difficult to imagine anything better for the above purposes.

Napthalin.—If you are going to the tropics to collect anything except rocks, take a big supply of flake naphthalin. In the Philippines, as in other tropical countries, there are many species of ants. A good part of these make it their business to eat every kind of animal substance they can find, and they do not neglect birds, from freshly killed specimens to dry skins. In a closed box naphthalin is sudden death to all species of ants and it prevents ants and other insects from entering. It also helps to prevent the growth of mould. Napthalin is a necessary adjunct to the botanist. A pinch scattered over each specimen when the first change of dryers is made kills the many "grubs" or insect larvæ which if undisturbed often ruin the flowers before the specimens are dry. There are also certain ants, mostly small black species so far as I have observed, which spend their time on shrubs and trees and decline to leave even when specimens are put in press. These also are driven off by naphthalin.

Gun Varnish.—During sea or shore shooting, or for rainy weather, a mixture of equal parts linseed oil and turpentine, applied daily to arms, will harden and form a coat which is impervious to moisture and is as superior to vaseline or "gun oil" as your own hair is to a wig. It seems needless to add that this mixture should not be put into the works of a gun. If the arm is to be put away for a month or more a coat of the mixture on the inside of the barrels is an excellent protection.

Fish-basket.—I suppose every bird collector has used a fish creel in the field and has wished that they were made without the hole in the cover. To get rid of the hole and to protect specimens from heat and rain get a piece of light colored oil-cloth a little larger than top of creel and sew it on letting it hang over the edge.

Abdominal Opening.—In dealing with doves, ducks, grebes and any birds with short or scale-like feathers a much better looking skin can be made if a transverse cut is made instead of the ordinary breast-to-vent opening. The cut should extend backward from the base of each leg and connect thru the vent. The skinning proceeds much as usual. In the make-up there will be no unsightly break in the central abdominal feathers and the cut, being closed by a few stitches, will present very little evidence of its whereabouts. This method may be known to American collectors but I first saw it used by my Filipino assistant, Andres Celestino.

Wad-marker.—Anyone having many shells to load will find a wad-marker made as follows an efficient and useful article. Take a square rubber eraser and cut the ends off smooth and square; on each end mark with a lead-pencil a number corresponding with the sized shot you most frequently use. Now cut away the rubber from around the pencil mark and the result is a rubber stamp.

Formalin.—If the feet of large birds be opened in the sole and a liberal amount of full strength formalin injected, the drying will be greatly hastened and all danger of sloughing scales will be avoided. There is considerable danger of the latter trouble in a damp and hot climate. In the case of long-legged birds such as herons, it is well to dose the leg at the tarso-metatarsal joint also. The liquid may be introduced by means of a large hypodermic syringe; but if that instrument is wanting bits of cotton soaked in the preservative and pushed inside the foot give good results.—RICHARD C. MCGREGOR, *Manila, P. I.*

Destruction of Herons by a Hail-storm.—The following brief item is from the Lyons, Colorado, *Recorder* of July 18, 1907:

"The cranes' resort, three miles east of Lyons, was broken up by the recent hail-storm. The ground under the trees is covered with dead birds."

The item refers to the Great Blue Heron, the mistake in nomenclature having been since corrected by the paper at my suggestion. The St. Vrain colony, near Lyons, where the disaster occurred, is a well-known and interesting heronry. These birds, in the northern Colorado colonies, on account of their habit of nesting in the tops of the trees above protecting branches, and the severity of occasional hail-storms, are very liable to destruction. In perusing the notebooks of Denis Gale I noticed that, in 1890, he found many nests in this same colony destroyed by heavy winds, and that he found buzzards nesting in the same trees with the herons.—JUNIUS HENDERSON, *Boulder, Colorado*.

Siphia erithacus Sharpe; a Correction.—I regret that thru oversight I have burdened this little flycatcher with another name and therefore wish to make this correction. *Cyornis erithaca* of Sharpe's Hand-list should stand as *Cyornis platenæ* (Blasius). *Ornis*, 1888, p. 308, with *Siphia erithacus* Sharpe and *Cyornis paraguæ* McGregor, *Condor*, VIII, p. 29, as synonyms.—RICHARD C. MCGREGOR, *Manila, P. I.*

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California

JOSEPH GRINNELL, Editor, - Pasadena.

H. T. CLIFTON, Business Manager, Box 404, Pasadena

WILLIAM L. FINLEY } Associate Editors
JOSEPH MAILLIARD }

Pasadena, California: Published Sept. 20, 1907

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States
Mexico, and U. S. Colonies, payable in advance

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other
countries in the International Postal Union.

Claims for missing or imperfect numbers should be
made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the
Editor

Advertising Rates on application.

EDITORIALS

In our last issue we reviewed *The Warbler*, a magazine of birds published at Floral Park, New York. We now take the opportunity to tell our readers something of the editor of that magazine. It is relatively seldom that a man of affairs, who has been successful in his business undertakings and acquired wealth, enters the field of natural history as a source of recreation and enjoyment. Perhaps the nature of Mr. Childs' business (seed and flower culture) developed the tendency towards scientific interests. Or, what was far more probable, an inherent love of nature led naturally into that line of business. His success as a florist is almost too well known to require mention here; yet a brief history of the inception and growth of the enterprise will doubtless interest our readers. We take the liberty of quoting the following from an article in the *Long Island Magazine*:

"A little over thirty-three years ago there arrived at what is now universally known as Floral Park, Long Island, but what was then little more than a wilderness, a boy of eighteen years of age, having none of this world's possessions, but endowed above his fellows with ambition, determination and initiative. That lad was John Lewis Childs.

"Born on a farm near Jay, Maine, young Childs early realized that the possibilities held out by farm life in the New England States

were comparatively small. His love of flowers and Nature in general caused him to determine upon the career of a florist. Without capital it was impossible to enter any market which a settled community might afford, hence if his ambitions were to be fulfilled he must locate in some district which had not yet passed the pioneer stage. From time to time he had heard of Long Island, of its even and salubrious climate, of its fertile soil, and its ideal situation; and he instinctively felt that here, if anywhere, he would be afforded a field peculiarly well adapted to his enterprise.

"When Mr. Childs settled at Floral Park he had not the advantages of railway communica-



JOHN LEWIS CHILDS

tion nor any of the other conveniences of modern times. Undaunted by circumstances, however, and in the face of every obstacle, he entered upon what was destined to be his life-work, constructing the first house in the district and performing manual labor for some time entirely unassisted.

"How small a beginning this was will be appreciated when it is learned that the proceeds of his first year of effort amounted to less than a hundred dollars. That was a small beginning, but it did not discourage Mr. Childs, who realized that if success were to be obtained at

all its price must be years of hard work and frequent disappointment. The condition of the flower market, and the difficulty thru lack of adequate communication facilities, of successfully competing with florists better situated than himself, told Mr. Childs that if he were to succeed, he must pursue an entirely original policy. Advertising at that time was in its youth and very few men had even a fair conception of its value. Mr. Childs was among the few. Commencing to advertise in a small way in a number of periodicals whose circulation would be likely to reach the people he desired to serve, he gradually increased his patronage as his trade increased, later commencing to issue a catalogue of his own. Today the number of catalogues which leave Floral Park each year is well over a million, and Mr. Childs' products are sent to nearly every important country in the world, an especially large trade being done with Australia and New Zealand. These catalogues are printed at Floral Park at the plant of the Mayflower Publishing Company, of which Mr. Childs is president. When this company was founded in 1892 one small press was its capacity; today it has a large web, three cylinder, and three job presses, owns its own electrotyping plant, publishes a local weekly, and employs a total of sixty hands.

"Of the products of Floral Park themselves little need be said, for their reputation is universal. Mr. Childs has always striven to attain the best results possible to a florist who thoroly understands the science of his art, and a very large number of the most popular plants on the market today were originated by him. As a real estate operator Mr. Childs has also been unusually successful, having engineered a number of very profitable deals. At the present time he owns, besides his 300 acres at Floral Park, over 600 acres at St. James. In political life also Mr. Childs has long been a prominent figure.

"But it is as a naturalist, perhaps, more than as anything else that Mr. Childs is well known. In the first place he has one of the finest private libraries in the world of North American natural history. It includes Audubon's original work, *Birds of America*, as well as other rarities. Mr. Childs also possesses the largest private collection of mounted North American birds extant, together with their nests and eggs, and has besides a collection of shells, insects, and minerals."

The ornithological collection alone now numbers about 1110 species and subspecies of North American Birds, and some 1030 species of eggs in full sets, many of them with nests *in situ*.

Mr. Childs has recently become financially interested in southern California, and his visits

to this coast are becoming frequent. We think we have grounds for the expectation that he will ultimately build a home here, and possibly establish his museum in this climate, where collections are so little bothered by mold and other museum pests.

The diminutive winter wren has worn the generic titles of *Troglodytes*, *Anorthura* and *Olbiorchilus* successively on the A. O. U. List during the past ten years. And now it is to moult again, so Dr. Allen and Mr. Stone both tell us. The latest exhumed name for the bird is *Nannus*. This name is brief, like the bird, and means a dwarf; therefore appropriate, and an improvement over any of the others. Long may it wave!

It seems that the "possessives" are not yet exhausted as a subject for logical argument. Mr. Henderson's communication in this issue certainly presents his views as to the correct usage in a convincing manner. Perhaps Mr. Dawson could knock them under, tho!

Messrs. Frank M. Chapman and Louis Agassiz Fuertes spent the earlier portion of the summer in the Rocky Mountains of Canada. They made base camp at timberline, from which they were able to make intimate studies of such alpine-arctic species as the *Leucosticte*, *Pipit* and White-tailed Ptarmigan.

We are glad to announce that after something more than a year spent in Colorado and New Mexico, Mr. and Mrs. M. French Gilman have returned to their home at Banning, California. Mr. Gilman will now have more leisure for bird study, and expects to re-visit the Colorado Desert and adjacent mountain ranges with the purpose of tracing the distribution of certain birds and mammals.

Mr. Murray Watson, M. C. O. C., has removed from California, and taken up his residence in Denver, Colorado. That is getting to be a pretty lively center for bird workers of late.

Mr. and Mrs. Vernon Bailey, of Washington, D. C., have been spending the summer in Biological Survey work in southern California.

Mr. Henry B. Kaeding is visiting California again after an extended sojourn in Sinaloa, Mexico.

Dr. T. S. Palmer, of the Biological Survey, visited Los Angeles in the early part of September. His mission was to obtain evidence convicting certain parties of elk-poaching in the Yellowstone National Park. Dr. Palmer is doing a valuable work in prosecuting special cases of game-law infringement, thus showing local wardens what can and should be done in that line. The Survey merits every possible

support, moral and practical, in this line of its work, and we of the Cooper Club are in line to help in the securing of more rigid enforcement of existing game and bird laws.

We are pleased to inform Cooper Club members that the entire cost of this large and varied issue of *THE CONDOR* is borne by Mr. John Lewis Childs, whose interest in the Club's welfare needs no further proof. Such a large and generous donation means that we are offering our readers in the present Volume far more than their combined dues and subscriptions would alone provide. We take this opportunity of heartily thanking Mr. Childs.

We have heard that Mr. R. H. Beck is contemplating yet another expedition to the Galapagos Archipelago.

The new Secretary of the Northern Division, Mr. Roswell S. Wheeler, was one of the original group of Cooper Club "boys" who used to hold animated bird meetings at Barlow's or Taylor's thirteen years ago. Those were jolly good times, and there's no reason why we shouldn't enjoy similar occasions now — only, perhaps, we are growing old and our enthusiasm wanes.

Let it be henceforth known, that *THE CONDOR* management will no longer print "For Sale" ads., relating to birds or eggs. We have been informed that it is contrary to the intent of the law to in any way make a commercial commodity out of such specimens, whether taken under permit or not.

Dr. William Lefrange Ralph, the well-known oologist, died at Washington, D. C., on July 8th, at the age of 57.

Dr. Ralph was born at Holland Patent, New York, in 1851. He was graduated in medicine in 1879 from the College of Physicians and Surgeons in New York City, and afterwards engaged in the practice of his profession in Utica, where he had resided since early childhood; but delicate health obliged him to abandon a medical career, and he turned to the less exacting study of natural history. From early boyhood he had cultivated a taste for this subject, and he now began in earnest the formation of a local collection of birds, eggs, and nests. In the study of the local avifauna he was associated with Mr. Egbert Baggs, and the researches of the two students resulted in the publication of an "Annotated List of the Birds of Oneida County, New York"¹ followed shortly by some "Additional Notes on the Birds of Oneida County, New York."²

It was to the subject of oology, however, that Dr. Ralph chiefly directed his attention, and

after nearly completing his collection of local species he spent much time in searching for desiderata, even employing men by the year in the Adirondacks and in Florida to hunt for certain rarities. In this way, and by direct purchase, he added many choice specimens to his collection, and secured valuable information on the nesting habits of various rare species.

Dr. Ralph early made the acquaintance of Major Bendire, and the two men soon became close friends. After the Major assumed charge of the National Museum collection of eggs, he usually spent his vacation in Utica, while Dr. Ralph always stopped at Washington on his annual visits to Florida. When the "Life Histories" were undertaken, he contributed many notes for them, and the two published volumes teem with items from his pen. In 1892 he sent the first installment of his collection to Washington, as a gift to the National Museum. This generous act was followed year after year by other donations, numbering in all about 10,000 specimens, almost all of which were in faultless condition, and accompanied by ample data.

In 1897, Dr. Ralph was chosen to fill the vacancy caused by the death of Major Bendire, and in 1901 his title was changed from Custodian to Curator. In the same year it was announced that he would continue the work on "Life Histories," and he began at once to accumulate data for the third volume (to include the families in the A. O. U. "Check-List" from the Fringillidæ to the Cœrebidæ); but owing to the precarious state of his health the volume was incomplete at the time of his death.

Dr. Ralph was a genial, mild-mannered man, of a uniformly cheerful and gentle disposition, one whose loss will be keenly felt by a large circle of friends and associates.—C. W. R.

COMMUNICATIONS

THE POSSESSIVE FORM IN VERNACULAR NOMENCLATURE

Editors of *THE CONDOR*:

Mr. Dawson's suggestion that either the possessive or adjectival form is right in such cases, for example, as *Centronyx bairdii*, seems open to serious question. The sparrow was not given to Mr. Baird. On the contrary, the name of Baird was given to the sparrow. Then why on earth should it be Baird's Sparrow? In many such cases the man whose name is given to the bird has never even seen the species, has had nothing to do with its discovery and was not even aware of the use of his name until the publication of the description. To illustrate,

¹ Trans. Oneida Hist. Soc., III, 1886, pp. 101-147.

² Auk, VII, 1890, pp. 229-232.

the writer knows nothing whatever about the bees—would not know one species from another. He happened to be at the head of an expedition which, utterly unknown to him, collected a new species of bee, which was given his name. Why, then, should he be entitled to call it "Henderson's Bee"? Why not call *Motacilla alba*, white's wagtail, to be consistent? Baird is as much honored by speaking of the Baird Sparrow as by using the possessive. If the possessive is to be used, then it should be the name of the man who actually discovered the first recorded specimen, whether he is the one who described it or whose name was given to it, or not.

JUNIUS HENDERSON.

*University of Colorado,
Boulder, Colo.*

A PRIZE BIRD DIARY

Editors of THE CONDOR:

An interesting ornithological study was recently successfully conducted by the children in Alameda, California. The children were invited to daily record during a given period of two months all birds which they actually themselves observed; to give the name of the bird, popular and scientific name when possible; to describe the bird's plumage; to say when, where and what the bird was doing at the time of observation; to state anything they knew of the habits, food or nature of the birds; whether resident or visitor; whether common or rare. The children were divided into two grades. Class A, 14 years of age to 10 years; Class B, all 10 years or under. Drawings of the birds were also asked for and thus a most interesting series of pictures of birds were obtained. Many of these pictures were colored and displayed marked ability on the part of the young artists. The number of birds observed and recorded by an individual student reached in some cases sixty, and forty different species, a record which not only indicated a very persistent search on the part of the student, but also an abundant local avifauna which was a revelation to the ordinary resident who from his limited field of observation concluded that there were no birds outside of a Sparrow and a Blackbird. Much interest was taken by parents and teachers and the experiment proved one of much attractiveness as well as one of considerable educational value. Prizes consisting of ornithological books were given to the most deserving students; the judges who examined the reports and upon whose decisions the prizes were awarded were the President, Vice President and Secretary of the Northern Division of the Cooper Club. The following birds were among those recorded: Western Gull, Cormorant, Pelican, Wild Ducks, Wild Geese, Great Blue Heron,

Night Heron, Rail, Sandpiper, Curlew, Willet, California Quail, Mourning Dove, Sharp-shinned Hawk, Red-tailed Hawk, Barn Owl, Burrowing Owl, California Woodpecker, Lewis Woodpecker, Red-shafted Flicker, Allen Hummingbird, Wood Pewee, Western Flycatcher, Blue Jay, Redwinged Blackbird, Meadow Lark, Oriole, Blackbird, Goldfinch, White-crowned Sparrow, Golden-crowned Sparrow, Oregon Junco, English Sparrow, Oregon Towhee, California Towhee, Grosbeak, Louisiana Tanager, Cliff Swallow, Barn Swallow, Cedar Waxwing, Shrike, Warbling Vireo, Lutescent Warbler, Yellow Warbler, Audubon Warbler, American Pipit, California Thrasher, Winter Wren, Parkman Wren, Nuthatch, Titmouse, Bush-Tit, Ruby-crowned Kinglet, Russet-backed Thrush, Dwarf Hermit Thrush, Robin, Varied Thrush, Blue Bird.

FREDERICK W. D'EVELYN

PUBLICATIONS REVIEWED

THE EYES AND EYESIGHT OF BIRDS, WITH ESPECIAL REFERENCE TO THE APPEARANCE OF THE FUNDUS OCULI, by CASEY A. WOOD, M. D., D. C. L., F. Z. S. (= Reprint from *Ophthalmology*, April, 1907, 24 pages, 2 colored plates, 8 illustrations in text.)

Eyesight and the structure of the eye is a most absorbing and interesting study. Since in birds vision reaches its highest expression, and since there are more wonderful adaptations of eye-structure in this class than in any other, surely a few moments spent in the consideration of bird's eyes will not be wasted.

The visual capacity of birds is very great. Dr. Wood takes the case of the humming-bird, which flies more rapidly than our eyes can possibly follow, and yet alights suddenly upon an almost invisible twig; of the woodcock, which flies rapidly thru dense forests, dodging every branch and twig; of the owl, which sees at night as well as it does in the day-time; and of the kingfisher, which can see in the water as well as in the air.

The author makes many original observations upon the likeness and unlikeness existent between the bird's eye and the human eye, taking up the bird's power of accommodation in some details. In this connection he quotes C. William Beebe, who asserts that a bird can transform his eye from a telescope to a microscope in a fraction of a second. A bird is able to see objects a quarter of a mile away which to us would be invisible, while on the other hand it can pick tiny seeds from the dust which we would need a magnifying glass to distinguish.

Much of the paper is devoted to a consideration of the ocular fundus, or the background of the eye as revealed by the use of the ophthalmoscope. Attention is called to the fact that

the regions of most distinct vision, called *macular* regions, and the depressions within their boundaries, called *foveæ* (singular, *fovea*), vary in position in different birds. In hawks, eagles, kingfishers, and insectivorous birds, which have the eyes placed upon the sides of the head so as to increase the size of the field of vision, two macular regions, and generally two foveæ, are found in the fundus of *each* eye. Dr. Wood infers from this that such birds have stereoscopic, or binocular vision in each eye, and accounts for their wonderful powers of fixation in this way. It is to be doubted whether this inference is correct. Binocular vision requires the production of *two similar images*. How could two images be formed in the same eye with only one lens?

That peculiar organ, the pecten or marsupium, comes in for a share of the discussion. This body is possessed by every bird. It stretches out from the ocular fundus into the vitreous humour almost to the lens. The form and complexity of the pecten vary much in different species. Its function may be to assist in pushing the crystalline lens forward during accommodative efforts, and it may also have something to do with the nourishing of the non-vascular structures within the eyeball.

Dr. Wood asserts that the background of the eye furnishes certain data of value in classification, since "wild species present invariable ophthalmoscopic pictures." On the whole the paper is very readable and well worth consideration.—WALTER P. TAYLOR.

THE BIRDS OF THE CHICAGO AREA, by FRANK M. WOODRUFF, is a bulletin which, in many respects, is a model of what a local list should be. It contains a full description of the territory included in the Chicago area, its climatic influences, and localities of interest; the latter of special interest to not only local but visiting ornithologists.

Many of the conditions opposed to birds are well brought out and one can well comprehend why many species once so plentiful about the head of the lake are now rarely seen.

A dozen full-page half-tones illustrate in a striking manner the more prominent features of the topography. The "List" itself contains 316 species and subspecies, and shows a great amount of careful research. It includes, besides the scientific and common names, all the synonyms, both popular and scientific.

One thing, however, is painfully evident and that is the very small amount of information regarding our birds which has been obtained during the past fifteen years. Mr. Woodruff has been indefatigable in his investigations,

but aside from an occasional record by one of the few ornithologists of this locality he has confined himself almost entirely to his own personal observations. This fact, and because of the size of the area, some parts of which were visited only at intervals of many years, makes the records scattering and often twenty years apart. To overcome this dearth of notes, Nelson's "Birds of Northeastern Illinois" has been quoted so frequently as to make the list, at times, seem more of a compilation than a record of up-to-date observations. Of about fifty birds listed there is nothing noted since 1876. It is therefore evident that many of these species should either be placed in a hypothetical list or else something more recent than a record of thirty-one years standing discovered in regard to them.

It is, however, fortunate for Chicago ornithology that there is one man among its two million inhabitants who has not succumbed entirely to the spirit of commercialism which prevades the Chicago area, and that he has had the courage to put in the shape of a list the results of twenty-five years labor.

Nelson 1876, Ridgway 1889 and 1895, and Woodruff in 1906, are all epoch making periods and we can only express regret that such long intervals elapse between them.

A bibliography, and an index of both scientific and common names, complete a very commendable effort.—F. S. D.

STATE OF NEW YORK; FOREST, FISH AND GAME COMMISSION; 1902-1903, 8th and 9th Reports; Royal 8 vo., pages 456; half-tones 156, 38 in color, 20 of them birds.—This is one of the most handsome state reports of its nature ever gotten up; and in the fullness of the ground gone over, the forest and game articles will prove instructive as well as interesting reading. There are two ornithological papers, dealing with "Birds as Conservators of the Forest" and "The Wild Fowls of the St. Lawrence River." The former article is by Dr. F. E. L. Beal, the expert bird-food authority. New York has chosen well a man to show them the beneficial office of birds as destroyers of forest insect pests.

Dr. Beal opens his paper with an account of "Birds that Destroy Insects"; how their busy lives are spent in hunting down the hoards of noxious insects that are daily attacking the forest trees. He mentions how some insects are supposed to be protected by their color, smell or taste; but stomach examination proves otherwise as to the keen senses and sharp appetites of their feathered enemies. In many cases where species of insects had strong odors and rank taste which were thought to protect them, these very species were found to form a very important percentage of the birds' food, often eaten to a varying extent by nearly all

† The Chicago Academy of Sciences | — | The Birds of the Chicago Area | by | Frank Morley Woodruff | — | Bulletin No. VI | of | The Natural History Survey | — | Issued April 15, 1907; pp. 1-222, frontispiece, plates I-XI, all half-tones.

insectivorous species. Dr. Beal heads the list of beneficial birds of the forest with "The Woodpeckers", as taking the lead in the well-fare of tree life. The first colored plate shown of this group, is of a Red-headed Woodpecker at the end of a dead stub, a big brown and yellow-edged grasshopper in its bill ready for the gaping mouth of a young bird humped up on the other side of the stub, in all anxiety and expectation of that hopper. It is the most happy thought for a plate, of the sixteen bird groups, all by that great bird delineator of the present day Louis Agassiz Fuertes. Other plates show the Northern Hairy, White-backed Three-toed and Black-backed Three-toed Woodpeckers, the Yellow-bellied Sapsucker, and male Flicker. Dr. Beal also mentions that the Warblers, Vireos, Chickadees, Creepers, Cuckoos, Orioles, Robins, Kinglets, Pine Grosbeaks, Crossbills, Crows, and Blue Jays, all play an important part as conservors of the forest. Crows, Blue Jays, Crossbills and many of the Woodpeckers perform a great part, in the planting of tree seeds, which replenish the forests. Birds of prey are also shown to be of some benefit by keeping down the many smaller mammals so destructive to young tree growth.

In the concluding article, "The Wild Fowl of the St. Lawrence River", by J. W. Dunham, are shown three colored plates by Fuertes, of the Hooded Merganser, Pintail and Golden-Eye; there are also nine half-tone plates of nests and birds from life. Mr. Dunham gives an account of the water fowl's habits, as they occur on the St. Lawrence River, and mentions such restriction as should be made to protect them and other game of this river once so famed for its wild fowl.—W. O. E.

The Bulletin of the Illinois State Laboratory of Natural History for April, 1907, pp. 305-335, contains a very novel article by S. A. FORBES, Ph. D., which is entitled, "AN ORNITHOLOGICAL CROSS-SECTION OF ILLINOIS IN AUTUMN."

The paper deals with the science of ecology, or the relations of organisms to their environment, animate or inanimate. At the outset the two terms, special ecology and general ecology, are discriminated between, special ecology being the ecology of *one* species, while general ecology is the study of the ecology of a whole assemblage of species. Most work previously carried on in this line has dealt with special ecology. This article is given up to a discussion of the general phase of the study in a truly original manner.

There has been carried on in the past, by the Biological Survey and by various other laboratories, considerable study of the food habits of various species of birds. Dr. Forbes conclusively shows that the data in this line which has been accumulated is not practically

applicable until the *relative numbers* and *exact distribution* of each species are known.

Two students were sent out by the Illinois State Laboratory to traverse the state in various directions, keeping accurate account of the distance traveled, birds seen, and crop areas passed over. The trip considered in this paper was made across the state from east to west in a straight line, from Danville, near the Indiana line, to Quincy, on the Mississippi. The men traveled 50 yards apart for the whole distance, taking account of all birds seen within this strip and 100 yards in front of them. Crops of corn, wheat, clover, timothy, millet, fruit, and timber were passed thru, and some pasture, meadow, stubble, plowed ground, yard and swamp lands were included in the strip.

The most numerous bird was the English Sparrow, 1620 of the 4804 birds seen belonging to that species. In all, 92 species of birds were observed, altho 85 per cent of the individual birds seen belonged to 15 species.

The bulk of the paper consists of tables of numerical facts, worked out from the data furnished by the two field observers. In these tables every possible relation of each species of bird to every other and to the various crops is taken into account.

In point of area corn was the principal crop, with the area in pasture land and stubblefield coming next.

From the tables it is apparent that the English Sparrow was the principal corn-field species; the Meadow Lark was most abundant in stubble fields and fields of young wheat; in pasture land the English Sparrow was the commonest, with the Crow-blackbird a close second; the Meadow Lark and Cowbird were equally abundant in meadows; Horned Larks were most numerous on plowed ground; while the ever-present English Sparrow was most numerous in orchards.

By taking the ratio of the birds found in a particular crop to the whole number of birds as a dividend, and the ratio of the area in that crop to the entire area as a divisor, the *frequency ratio* of the bird and crop in question is found. Then by dividing the frequency ratios of a species for each crop by its frequency ratios for all the other crops, the *coefficients of preference* are obtained.

The article closes with a table of the 92 species identified, with the numbers of each. It is characterized thruout by the mathematical precision with which the observed facts have been recorded. A new and instructive line of work is opened. It would certainly seem that the true ecological significance of the birds of a community could be gotten at in no surer or simpler way than this. In place of general inferences, results have been actually figured out, accurately and graphically.—WALTER P. TAYLOR.

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THE CONDOR

A Magazine of Western
Ornithology

Volume IX November-December, 1907 Number 6



COOPER ORNITHOLOGICAL CLUB

NOV 1907
19897A


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Entered as second-class matter May 1906 at the post office at Pasadena, California,
under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, 576 North Marengo Ave., Pasadena, Cal.

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In sending in renewals for 1908 please note that the price of THE CONDOR is now \$1.50 per year in the United States, Mexico and U. S. Colonies.  \$1.75 per year in Canada and all other countries in the International Postal Union.

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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume IX

November-December 1907

Number 6

WHITE-THROATED SWIFTS AT CAPISTRANO

By FLORENCE MERRIAM BAILEY

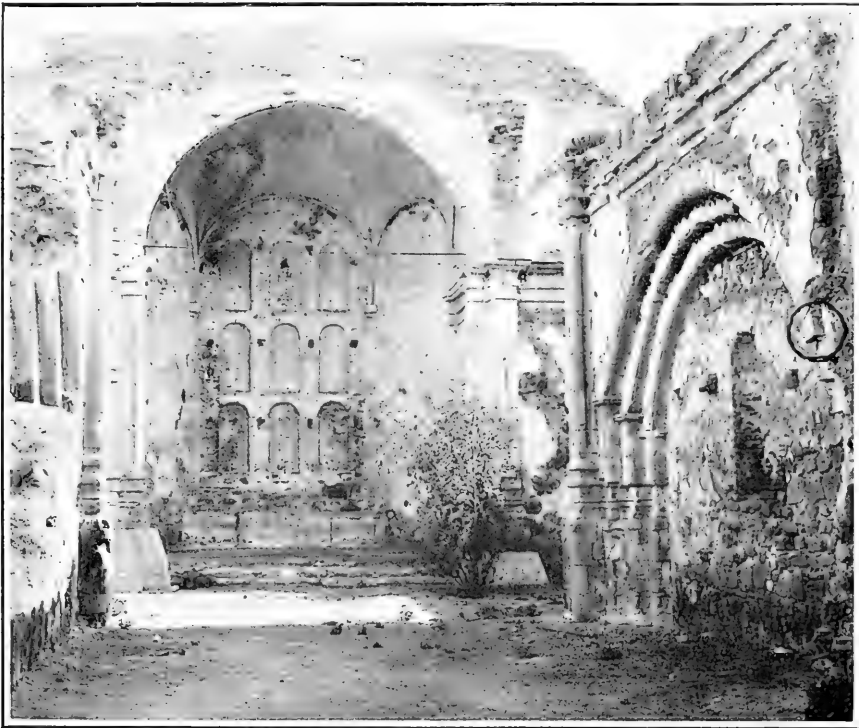
THE only swifts we had seen during a month's field work in California had been in the San Jacinto Mountains where, as usual, the birds were circling among high cliffs; but when, toward the middle of July we reached Capistrano, in passing the ruins of the famous mission to which our eyes turned involuntarily, our steps were arrested and we exclaimed in amazement, for circling about over the interesting old walls, mixed in among a large flock of eave swallows were a few White-throated Swifts (*Aeronautes melanoleucus*). Tho few they were easily picked out from the nondescript swallows by their clean-cut cross-bow forms patched with white.

Their wild, shrieked-out notes recalled canyons walled with rock in the depths of the mountains and we marvelled that the birds should stop even in passing at such a place as this. For altho the mission is a ruin, part of it is still in use and the old green mission bells still clang loudly when the priest comes; moreover, while surrounded by a sleepy Mexican village the mission stands on the automobile highway between Los Angeles and San Diego over which whizzing touring cars toot at all hours, and still worse, twenty rods away the Santa Fe trains whistle and puff and rumble over their tracks. As we watched the Eave Swallows (*Petrochelidon lunifrons*) whose nests line many of the mission arches we wondered if the presence of their large colony had not given encouragement to the swifts, had not made it easier for this little band of cliff dwellers to decide to take up their abode among men.

That they had taken up their abode in the Mission of course remained to be proved, but the old ruin suddenly took on new interest—tell it, or not, to the archeologist—and was explored with one eye to the dim historic past and one eye to the vivid, living, ornithological present. To think of having White-throated Swifts in a *building*—even a ruined one—where you could watch them close at hand! The nearest approach my lucky star had previously vouchsafed had been at the foot of the sandstone cliffs of Acoma where, high overhead, belittled black figures had been seen squeezing into cracks in the rock.

In looking for the birds' nests we followed down the long colonnades whose beautiful arches with their deep shadows attract the photographers and whose richly tinted old walls afford subjects to rouse the enthusiasm of colorists, but they revealed no ornithological treasures, and a dusky old deserted chapel that was entered proved only the home of the barn owl seen when mousing for her squealing young at bat-hunting time. As she flew from her attic—an ancient choir loft?—and flapped out thru a window into the ungrateful light of day we passed on, to enter at last the main old chapel whose bell tower had fallen in during the earthquake of 1812.

As it was now open to the sky it was a good place to watch from, and seated on a block of the fallen wall I looked up at the swifts circling around among the



CHAPEL AT CAPISTRANO WITH EAVE SWALLOWS' NESTS UNDER ARCHES, AND
WHITE-THROATED SWIFTS' NEST AT END OF SIDE ARCH
(Site Marked by Circle)

eave swallows, at one time seeing a buzzard's big dark figure above the rest. The swifts darted around thru the sky at such lightning speed it was hard to keep track of individuals, but ten were finally told off, in sight at one time.

When they were circling about, their notes had the metallic vibrant quality and the delightful tang peculiar to them, but when they set to on rapidly vibrating wings to chase after each other they gave a common swift-like twitter.

At their slowest it was hard to tell just what they did with their wings except when they set them for soaring, but once both wings seemed held high above the body for a moment, and in rapid running the two appeared to be used alternately as those of the common swift seem to be at times.

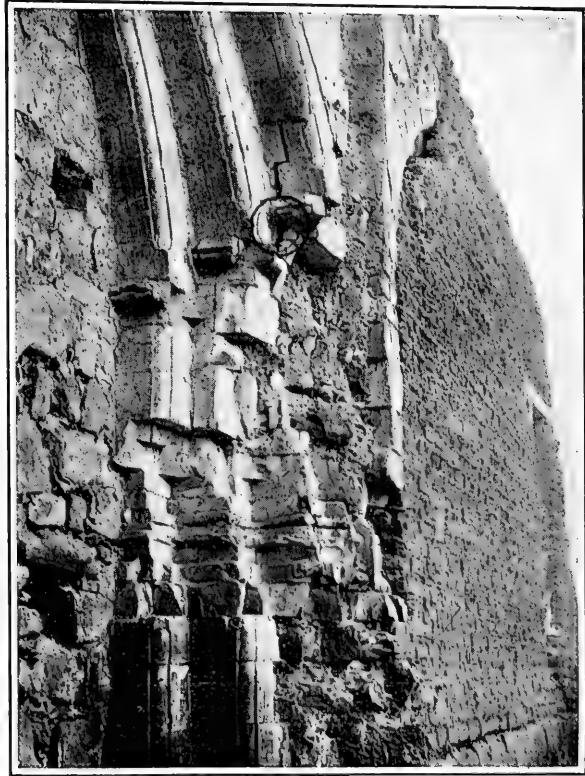
While I sat watching the birds up in the sky suddenly down between the roofless walls a swift came dashing toward me to turn with a loud call and disappear up an earthquake crack at the end of a stone arch only a few yards away. The loud sibilant voices of clamorous young told what happened next. On coming out the old bird apparently discovered that she was watched, and it was some time before she came again. When she did, she came silently but flew bravely straight to the nest. The cries of hungry young being fed just out of sight in wings of the chapel—sacristies—led to the discovery of three other nests or, strictly speaking, occupied earthquake cracks.

The nest behind the end of the stone arch was the only one seen and this—as it was ten feet from the ground—only by climbing and peering up the crack. The crack, as seen in the photograph, was behind the capitol of the pilaster on which one end of the arch rested, the capitol having been jarred away from the wall by an earthquake—doubtless that of 1812. About ten inches up this crack the nest could be seen tightly wedged in between walls less than two inches apart. As well as could be seen without destroying the nest, it was made of bark, feathers, grass, and wool.

The entrance to one of the other nests was a small square hole at the lower end of an irregular earthquake crack that began at the top and ran down to about fifteen feet of the ground, and was discovered by seeing the old bird fly swiftly across to the wall, linger a second before the hole and then disappear inside. The weaker voices of the young at this nest argued that they were not so old as those at the end of the arch.

The two other nests were in chinks between stones of the cornice, about thirty feet from the ground. At one of these the white front of the old bird was strikingly in evidence as it squeezed out from the nest.

The old swifts quickly got used to spectators and the coming and going silently, darted by at close range. As they approached, the snowy whiteness of the throat and breast, apparently tapering to a V, held the eye, and as they went by, the white rump patches seemed almost as striking a mark. One of the high cornice birds once passed out with a downward swoop so close to my ear it seemed



ENTRANCE TO SWIFTS' NEST AT END OF ARCH
(Marked by Circle)

to roar by. A black cat that walked into the chapel was surprised by a similar—passage of arms?

The cat might well have been attracted to the old ruin as a hunting ground, and had the swifts wanted other avian associates they would not have lacked for them. For besides the eave swallows whose nests lined some of the arches of the chapel, there were many visitors. Barn owl pellets strewed the chancel floor showing that the occupants of the loft beyond frequently stopped in passing. Humming-birds whizzed in to feed from the long yellow tubes of the tobacco tree standing at the foot of the chancel, and brown chippies hopped about as if realizing that their presence was needed to complete any California assemblage. A harsh-voiced kingbird and a gentle black phoebe were seen perching on top of a roofless wall, while a mocker, as usual wholly unconscious of his flippancy lit airily on the cross of the restored chapel.

But while enjoying the feathered visitors who seemed so much at home about the ruin, I had not learned the last word concerning the residents. The nests of eight of the ten swifts actually counted had been placed, but there remained at least one pair of birds still to be located, and the colony might well have numbered more than ten. The best places on the inside walls had been examined but the high outside walls of the chapel in whose chinks tobacco trees had taken root at various levels afforded abundant nesting sites, and before leaving I made a hurried examination of them, forcing a way thru the high thicket of brown cockle burs at their base.

A house wren whose brood was in the weeds below was overhead hopping jauntily along a row of eave swallow nests decorating a cornice, and glimpses were had of visiting artists at work in picturesque corners, but the swifts were little in evidence that morning, perhaps because the priest had come to the village—called to administer the Last Sacrament to a dying Mexican—and there had been a great ringing of bells and early mass at the little chapel a stone's throw from the swifts' part of the old Mission.

Whatever the reason, the only members of the colony seen were on the wing. But they were worth wading thru cockle burs to see. They were on the way to the chapel nests but instead of flying straight to them, to my surprise, circled completely around the outside walls of the chapel before entering! Apparently they had come at such a high rate of speed that it was easier to slow down gradually and to fly in on a curve. It was interesting and characteristic, for tho the swifts when flying more slowly sometimes change direction with a jerk, when going fast they generally circle in large curves.

Tho convinced that there were probably more nests to be found in the outside walls if I could but watch long enough, trains do not change schedules for lagging ornithologists, and my time was up. Turning away from the Mission absorbed in thoughts of the present I was startled by the vision of a tall Franciscan in long gown and Friar's hood, crossing to the chapel—like a ghost from Capistrano's historic past. Even then, however, while pausing to look back upon the wonderful old ruin with its arched chapels and beautiful colonnades, my chief regret was that I must leave without further study this home of the White-throated Swifts.

Washington, D. C.

FROM BOULDER TO THE SEA

By MILTON S. RAY

With Photos By OLUF J. HEINEMANN

I HAVE traveled with pack, afoot and on horses, with team and wagon and even in an automobile; but the most care-free trip I have ever taken was in May of the present year (1907) when Heinemann and I set forth from Boulder Creek carrying practically nothing except a film-pack camera and some tools of taxidermy. For board and lodging we trusted to the usual hospitality of Californians, altho we had for emergency a few Italian biscuits called "galletta" which while little known are a positive boon to the camper.

What impressed us most as we walked along that grand mountain road, built by the State, which leads to the Big Basin, was the devastation of the timber. Lumber mills were cutting everything in the tree line, "as long," as one of the hands stated, "as would make a three by four," while the shingle makers bringing up in the rear and utilizing the stumps, left only a brush-covered waste in their wake. Boulder itself no longer possesses any of the magnificent groves it did in the past and in time it seems the Big Basin Reserve will be all of the great woods that will remain.

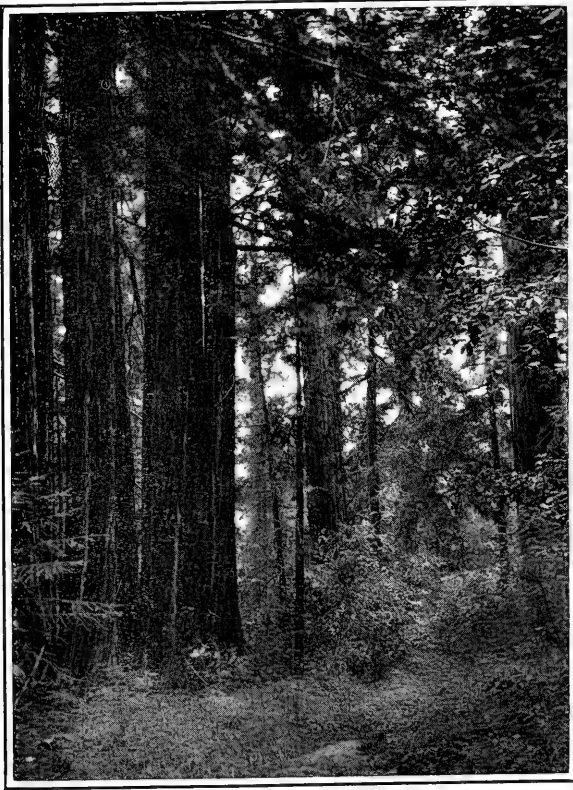
On starting, in a weed patch, on the ground, we came upon a nest of a typical bird of the region, the Point Pinos Junco (*Junco hyemalis pinosus*), with four large young. But this find was soon forgotten when we discovered on the headwaters of Boulder Creek the most beautiful nest of the American Water Ouzel (*Cinclus mexicanus*) that it has ever been my good fortune to locate. A great ball of rich green moss placed against a mossy bank, overhung with leaves and just above a miniature waterfall, it made so perfect a picture that it seemed unreal. The stream is not deep, the water cold, nor the current swift, when one has a nest like this to photograph. After the tripod was placed in two positions in the water and the views were taken, the nest was reached and found to be just completed. The owners who flew back and forth lit so close at times that we were almost tempted to try a film or so on them. On returning to the road and meeting a band of bare-footed urchins I feared for the safety of the pretty little nest by the waterway for there are many still who disregard the ukase of Vogelsang.

Altho we rambled along with a lazy, careless stride and stopped and inspected everything worthy of notice we finally crossed, however, the ridge which walls the California State Redwood Park, better known as the Big Basin, on the east. The recent forest fire while it swept over a large area luckily did not destroy much State timber. On the edge of this burnt section I saw about fifty yards away two birds running thru the brush that appeared very much like grouse. I ran forward, but with a sudden whirl of wings, also grouse-like, the birds took flight and disappeared in the thick forest. I have seen grouse in the high Sierras and in Mendocino County, which is a type of country very similar to this; still I hesitate to record the bird for Santa Cruz County on this evidence alone, but feel confident future workers will verify it.

At the Governor's Camp, as the settlement is called, in the heart of the Park, we spent the close of day, the night and some hours in the morning. This point lies twelve miles from Boulder Creek at an elevation of 1002 feet. Here in the clearings we met with bands of Santa Cruz Chickadees (*Parus rufescens barlowi*), a few California Quail (*Lophortyx californicus californicus*), and Western Blue-

birds (*Sialia mexicana occidentalis*). The only songster much in evidence was an occasional Black-headed Grosbeak (*Zamelodia melanocephala capitalis*) which trilled from some lofty perch in the redwoods. We found the Coast Jay (*Cyanocitta stelleri carbonacea*), however, to be the commonest bird thruout the entire region.

After rambling among the greater trees about the camp the highest of which rises 2900 feet, we struck out for the Blazed Trail hoping in the usual course of events to reach some habitation by nightfall. The sky was cloudy and became more so as we went coastward, but even on clear days but little sunlight filters thru this great maze of trees. The ground is a damp spongy mass of decayed vegeta-



A FOREST VIEW, ABOUT TWO MILES WEST OF GOVERNOR'S CAMP, BIG BASIN

tion on which the footfall is noiseless. The wind in the tree tops, like the roar of some far distant surf, the splashing of a stream as it swings along and an occasional bird call is all that breaks the stillness of these majestic but gloomy solitudes. We left the Blazed Trail for a branch that led us to the waterfall of Berry Creek which tumbles in a delightful fashion, with foam and spray, for seventy feet down a moss-grown bank. It was here at the foot of this fall, amid the roar and flying mist, placed like a wedge in the crevice between two giant boulders, that we found our second nest of the Ouzel. It was in a position which made it almost impossible to photograph. This nest like the first was but newly completed. The birds in this case were very wild compared to the previous pair.

Now, while I believe I fully appreciate the scenic

beauty of waterfalls, still I must acknowledge I was not altogether anxious after seeing the Berry Creek Fall, to plunge into a trail-less forest for several miles to view an upper fall simply because it fell four feet further and some claimed made a prettier picture. But to that enthusiastic photographer, Heinemann, this was a challenge that could not go unanswered. We had been told that by following the stream and turning at certain points that the trip was an easy one, in fact we were informed several young ladies had reached the upper falls the previous year. After crawling on hands and knees thru brushy thickets, winding gingerly thru nettle patches, clinging and treading along mossy banks and lastly forced to wade the icy waters of the turbulent stream we finally came to realize that we had taken the

wrong fork. The banks of the stream had now become so precipitous that we were compelled to make our way thru the heavy undergrowth and over the countless logs of fallen trees. It was at this point we came on a nest prettily tucked in a natural cavity in the bark of a giant redwood. It proved to be that of a Western Flycatcher (*Empidonax difficilis*) and was made of moss and bark strips and decorated with lichens and spider webs. The nest contained four young about one-third grown. While adjusting the camera the parents flitted nervously from

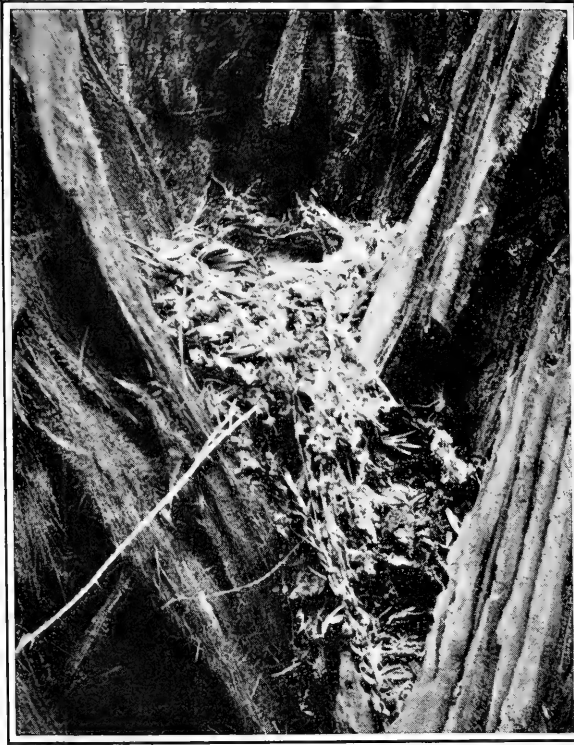


WATER OUZEL'S NEST (UPPER LEFT-HAND CORNER) ON HEAD-WATERS OF
BOULDER CREEK

branch to branch, uttering a feeble call note. But we soon left them and their tiny home in peace; for about this time we had troubles of our own. Having nearly lost the camera on one occasion we did not favor retracing our steps, so after some deliberation decided to journey straight over the hillside to the west. At least we thought it west, but the day was very cloudy and we lost our bearings; for after plodding along several hours we crossed a trail which showed we were heading for the east. An hour's walk on this trail brought us to the western edge of the great

forest; true heavy timber still prevailed along the streams but forsook the higher hillsides along which we now traveled. After a walk of several miles along the ridge and several more down White House Creek we found ourselves on the county highway, which for the most part runs along the edge of the cliffs.

We spent the night at the home of a prosperous dairyman and the only difficulty we had was to prevail on our host to accept some return for his kindness. The following morning, May 25th, Oluf desiring to take some views of Anna



NEST OF THE WESTERN FLYCATCHER ON THE TRUNK
OF A GIANT REDWOOD, BIG BASIN

Nuevo Island and its lighthouse we crossed a mile or so of sandy waste of a headland the point of which lies directly opposite the island. Here in the sand banks along the beach I found several colonies of Bank Swallows (*Clivicola riparia*), worthy of notice; for unlike the great colonies in the cliffs about Santa Cruz where several hundred birds nest, there were but half a dozen pairs or so together. The sand banks were about ten feet high and most of the nesting burrows were only placed eight feet or so up, so it was an easy matter to reach them. The tunnels ran from two and a half to four feet in and contained either eggs in various conditions or small young.

We resumed our tramp about noon and some hours later arrived at Scott's Creek. Finding the stage just about to leave and being informed that the road from there on

passed thru a region possessing little of variety or interest, we took passage and that evening found us again in our "bungalow by the sea" at Capitola, our permanent camp from where we made numerous other excursions into the mountains of Santa Cruz.

San Francisco, California.

A COLONY OF TRI-COLORED BLACKBIRDS

By JOHN G. TYLER

THE last day in April of this year found me in the field about thirty miles south-west of Fresno. Large wheat and alfalfa ranches extended for some miles in each direction and were crossed by several large canals or sloughs besides a great many smaller ones.

While crossing a field from which the water had evidently been drained only a few days before, I noticed a number of Tri-colored Blackbirds (*Agelaius tricolor*) flying out toward the field from a point somewhere to the west of me, while about an equal number were constantly flying up from the ground and returning in the direction from which the others came. It was evident that there was a breeding colony not far away and I decided to find it if possible.

About half a mile or less from where the birds were first seen, I came suddenly upon a patch of nettles of something less than half an acre in extent, growing in a low, damp sink that was really the end of a large abandoned slough.

In the lowest land the nettles were very dense and some of them were six feet or more in height; but toward the border where the ground was higher and dryer they gradually became smaller until at the outer edge they were scarcely six inches high and were finally replaced by a rather thin growth of foxtail grass. On two sides of the nettle patch was a more or less dense fringe of willows. Altho only a few birds were to be seen it was apparent at once that this was the object of my search, for the leaves of the nettles and willows and even the grass had the appearance of having received a coat of whitewash.

Before reaching the nettles I was somewhat surprised when a female blackbird fluttered up from the grass and revealed a nest built on the bare ground. A rather hasty search resulted in the finding of several other nests in like situations. These were all built out in the short thin grass and not concealed at all or protected from the rays of the sun and would certainly have made a rich harvest for some prowling egg-eater. There was nothing, however, to indicate that they had been disturbed in any way.

The dozens of birds that from nearly every twig screeched and cackled their displeasure at my presence, only made me more determined to explore the densely populated portion of the colony. The nettles looked rather formidable, however, and for some time I walked around the outside of the colony like a small boy running around a swimming hole before getting up courage to plunge in. Once or twice my eagerness to look into some partly-concealed nest caused my face to brush against a nettle stalk, so I finally decided to take the consequences and waded right in.

For more than one reason the hour that I spent there will probably never be forgotten. There were nests everywhere: in some instances three or four built one on top of another, tho in such cases only the upper one appeared to be occupied. The average height from the ground was between one and three feet, but many were seen that were ten and twelve feet up in the willows. They were all built almost entirely of grass stems that had been freshly pulled, giving the nests a bright, green appearance. Some of them had a few coarse brown weed stems woven into the framework but in the majority no other material but the grass was used and none contained any lining. As the heads of the grass had not been detached, the nests presented a ragged, fuzzy appearance. In size and shape they varied greatly, due no doubt to the different situations in which they were built,

A great many of the nests contained eggs and it would be impossible for me to describe the wonderful variations in size, shape and color; but the most common type was a pale blue ground color of a decidedly different shade from the usual tint in eggs of the Bi-colored Blackbird, with a few heavy scrawls on the large end. These markings resembled rust spots more than anything I can think of. Four eggs were the usual complement, but sets of three and five were not uncommon.

One fact that impressed me more, perhaps, than anything else was that in the center of the colony where the nettles were thickest, nearly all of the nests contained small young birds and doubtless it was the parents of these that I first saw. A little farther out, however, there were full sets of badly incubated eggs while near the outside were incomplete sets of fresh eggs.

The only way I could account for this was to suppose that only a portion of the colony had first settled in the nettles, choosing, of course, the rank growth in the center. A few days later, perhaps, another flock came upon the scene while traveling about in search of a nesting place, but were compelled to take a position nearer the outside. In this way, possibly, several flocks arrived at intervals of a few days until finally the last ones to appear chose to build upon the ground rather than leave so desirable a place. This is only a theory but it does not seem unreasonable.

As was suggested before, there were a number of reasons why that was a day long to be remembered and while I shall never regret the experiences yet there were some features that were not altogether pleasant. I was not long in discovering that the willows shut out every particle of breeze and that the sun was shining down fiercely, causing large drops of perspiration to pursue each other down my face; furthermore nearly every step disturbed half a dozen big hungry mosquitoes that lost no time in getting to work on my face, and any attempt to brush them off generally brought my hand in contact with a nettle stalk which produced a sensation that was not altogether pleasant. Added to all this was the din made by hundreds of birds that perched about on every side and entertained me with a wonderful variety of vocal selections.

One attempt was made to count the nests in this colony but after tramping around for a few moments I had no idea what portion of the colony had been explored so I sat down to try and estimate the number of birds in sight. This seemed an even more difficult task as the birds were constantly changing their positions so I contented myself by saying "There must be hundreds of them."

The food that I had first seen them gathering seemed to be a short, heavy worm but I failed to find any while crossing the field, tho there must have been a great many as it seemed to be no trick at all for a blackbird to pick one up anywhere. It would be hard to imagine the number that must have been required a few weeks later when all the eggs were hatched.

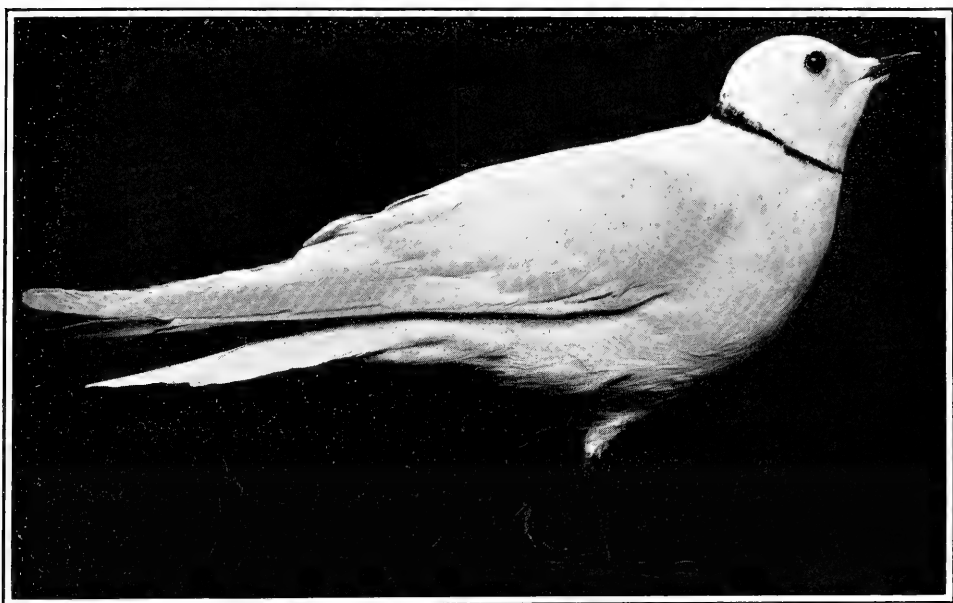
About two hundred yards from this colony was another nettle patch of nearly the same size and evidently tenanted by about the same number of birds; but it would have been necessary to wade a slough to investigate more closely and my time was somewhat limited. Perhaps it would be well for me to admit too, that I had encountered about all the nettles that I cared for in one day so I hurried away to the nest of a Swainson Hawk in a tall cottonwood where there was more breeze and fewer mosquitoes.

Fresno, California.

EGGS OF THE ROSY GULL

By JOHN E. THAYER

I HAD the good fortune to obtain from Mr. S. A. Buturlin, a Russian Ornithologist, some eggs of Ross's Gull (*Rhodostethia rosea*), also a chick and a pair of adult birds in full breeding plumage. It was Mr. Buturlin who first found in 1905 this beautiful Gull breeding on the delta of the Kolyma River in northeastern Siberia.



ADULT MALE OF THE ROSY GULL; FROM MOUNTED SPECIMEN IN THE COLLECTION OF JOHN E. THAYER; ABOUT ONE-HALF NATURAL SIZE



EGGS OF THE ROSY GULL; ABOUT ONE-HALF NATURAL SIZE

In an interesting article which was published in *The Ibis* he says that it was May 30, 1905, that he saw the first ^a Rosy Gull. On June 13th, the day on which the ice on the Kolyma broke up, several clutches of eggs of this species were brought to him, all incubated. They breed in small colonies of from two to three

a. Mr. Buturlin in his article always speaks of *Rhodostethia rosea* as Rosy Gull; which I think a most appropriate name.

to ten or fifteen pairs, in company with the Black-capped Tern. They lay sometimes two, but nearly always three eggs. These are very handsome, being a beautiful deep rich olive-green. They are spotted especially near the larger end, with chocolate brown. The spots are of unequal intensity, some darker, some paler, with every intergradation.



DOWNY YOUNG OF THE ROSY GULL; ABOUT
ONE-HALF NATURAL SIZE

Mr. H. E. Dresser in describing these eggs says: "They cannot be mistaken for any other Gull, except perhaps those of *Xema sabinii*. From the latter, however, they may be distinguished by being decidedly green in tone of their color, whereas those of *Xema sabinii* are not so, and by having the surface of the shell dull and glossless, whereas the eggs of the Sabine Gull are somewhat glossy.

The young Rosy Gulls, says Buturlin, are very lively and clever little creatures. As soon as they see an intruder they try to creep thru the grass to the water, and swim away to some distance, even if the waves are comparatively heavy. If you lie well hidden, after several minutes the little creatures begin to swim about, returning to the ground or the wet grass whence you disturbed them and uttering cries as they search for their mother. When caught, they peck your finger, peep and quack, but are not much frightened.

Lancaster, Massachusetts.

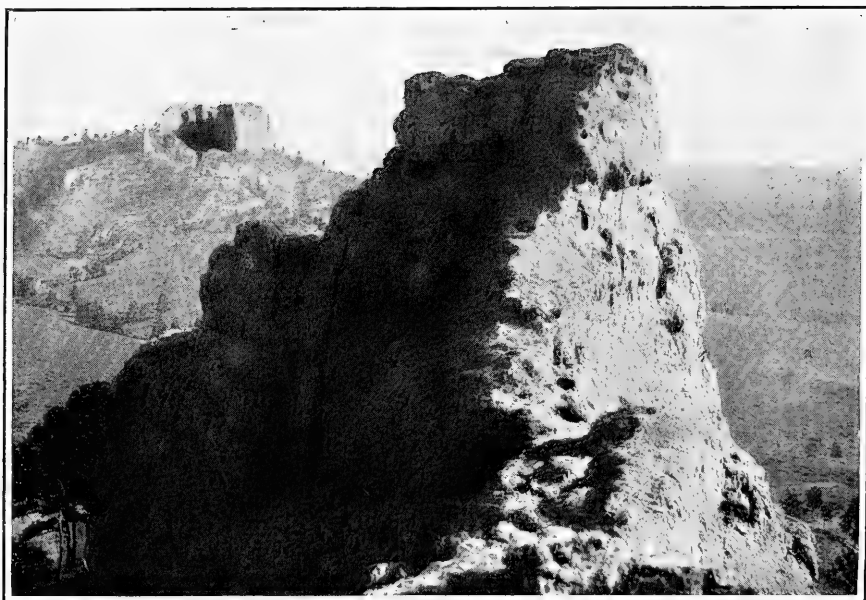
THE PRAIRIE FALCONS OF SADDLE-BACK BUTTE

By P. B. PEABODY

FEW birds have so completely aroused my enthusiasm and won my heart. I came to know them, superficially, many years ago. Two successive summers, thru the generosity of the shy, black-eyed son of a Pittsburg millionaire, I spent two successive months of August in Manitou Park. The lad, for some strange reason, had taken a sort of fancy to me; tho I, as Chaplain of the boarding school, had barely spoken to him. And so I had the rare joy of long, ideal days in the most beautiful spot in all the world; among birds of rarest interest. Here, with "Orlando" as a quiet but most sympathetic companion, I explored the mesa and the foothills, finding there, among the many other hawks that battered on the vast prairie dog towns far down the mesa, an occasional winnowing Falcon. The supreme delight I found in examining the nest-cavities long occupied by the Prairie Falcons in the red sandstone monumental rocks is just as thrilling today as it was those August days, over twenty years ago. The genuine bird man never grows old!

An illustrated Bulletin of the wide-awake Nebraska Ornithological Union, issued a few years ago, aroused in me a sharp renewal of deep-slumbering interest in the Prairie Falcon. For a half-tone which accompanied the account gave the exact spot where Mr. Carriker (now in South America) saw two callow young and a tantalizing egg lying on a ledge twelve feet below the summit of the nesting butte. And it was graphically told how the daring youngster was only restrained from attempting that dangerous vertical climb-down, without any rope, over the wetted rocks, by the caution of two staid professors of the University!

The half-tone looked strangely familiar, tho the butte had been pictured from an aspect I had not seen. Suddenly it dawned upon me that the Saddle-back Butte was none other than one of a most venerable series which crowned the hill-tops of a certain picturesque uplift above the prairie, in Sioux County, Nebraska. These I had seen and admired as I entered the country, Wyoming-ward. I was but seventy miles away. I would see the Saddle-back again!



SADDLE-BACK BUTTE, THE NESTING SITE OF THE PRAIRIE FALCON

With ample ropeage I went, in latter-May. As I climbed the slow grade that rose to the foot of the butte I kept both eyes astrain for the sight of the kingly birds not seen before for twenty years. But only as I touched the steep incline and laboriously began the upward climb that led to the foot of Saddle-back Butte did the male come out at me.

With what incarnation of mingled grace and solicitude did he sweep down the cliffs toward me, uttering the while, a mellow, quavering cry—Wert-wert-wert-wert-wert—which rang out vibrantly on the morning air. Poising, afar, he began to sweep half-timid, half-cautious curves in my direction. It seemed as if he were worrying about that sitting mate of his; yet felt a little too cautious to show it. I toiled to the south side of the butte, and made the winding ascent to the top, amusing myself by reading the "fools' names" that were carved at nearly every step. Over the narrow, sloping crest I crept with hair on end, and stood on

the fairly level top. Just below the north margin, overlooking a panorama beautiful beyond words, I could see, as I crept nearer and nearer, the stiplings of bird-lime which, as seen from below, had attracted me to that profile of the butte. There, surely, lay a hidden ledge. Only its outer edge could be seen. The female *must* be there: why could I not dislodge her? Back to the south, a dozen feet from the north brink, stood a flag propped up by fragments of the soft, rough, nodular chalk-rock: did the Falcons put it there as a mark of eminent domain?

Descending I viewed the environ of the north ledge from the ground. It seemed a full thousand feet above me; and full-dangerous of approach. The male falcon was on the watch. His caution did not desert him; nor did his anxiousness. Anon he would make a sally and a survey in my direction, returning then to his favored perch. There he would crouch, eyes fixed upon me, in what seemed to me an attitude of reproach.

With a crooked stick for a probe I regained the summit. The ledge was essayed. But it proved as futile, as baffling as ever. And the female refused to dislodge. A sickening feeling of disappointment began to creep over me. Slowly I descended. A tour of the butte gave me the petty solace of a few remains of falcon-prey: mostly flight feathers of the Red-shafted Flicker. Then back to town I slowly crawled. The flicker mementoes were lost, on the way. The negatives, taken with such care, proved hopelessly blackened.

Nevertheless, back I came the following May. One had learned a *little*. It seemed clear that my falcons had wholly outwitted me; and that I had never scanned the real nesting place at all. On this second visit the old male falcon tactics were repeated. A few wide sallies were made, yet the "manner", this time, was quite as it had been before. But finally, to my surprise, the bird disappeared.

At intervals of camera work, beneath the shadowing of a friendly little bull-pine, I lay down to rest. Virtually I was hidden. The male falcon suddenly appeared. And his manner *now* was nonchalant. A quick reconnoitre on his part made it plain that there was no eyrie on the north end of the butte. Amid the quick bewilderment that struck me, the falcon suddenly swept right into the heart of the west facade, and bent his way upward with consummate grace. And there, from a pot-hole previously unperceived by me, his mate came out to meet him with quivering wings and a little cry. Fain would I try them both, *now*, to see what both would do, together. Out in the open I came; and crept along the foot of the cliff.

The male seemed now to feel at ease. He had done his duty. On some jutting ledge or nodule, above my head, he would perch for moments at a time; and what a spectacle of unconquered pride and beauty he made, as he sat there, sun-glorified; while the field-glass brought him—splendid plumage, olive-yellow legs, flashing eyes—all within arm's-length of me!

Not thus, the sitting mate. She never rested, was seldom silent. The same, soft, mellow quavering cry which I have so often heard emitted by some solicitous Rough-leg circling her snowy young in their hill-side nest on some steep North Dakota gorge, resounded now, from the mother Prairie Falcon, ceaselessly. Meanwhile, in great circles, now from the one side and now from another she swept down at me with that apparent mingling of anger and fear so fascinating in any wild mother. So close would she come, at times, that I could almost fancy the whiffing of her wings upon my face. Sometimes from the base and again from the top of the butte I watched and tested the birds. Yet nearness from above seemed in no sense to increase the female's solicitude; nor did one's withdrawing part way down the incline, appear to abate it. Then, suddenly, as if in concerted plan,

both birds winged away. In moments incredibly brief they had disappeared, nor did they return. It mattered not. My work was done. What good is a rope, intended for twelve-foot work, when the twelve feet are lengthened into fifty?

But in May, 1906, I was fore-armed. There was 500 feet of inch-and-a-quarter rope, several hundred feet of smaller, and a "tackle" warranted to hold up a dead weight of 500 pounds, and to stop, without slightest danger, at any desired point. What an ideal arrangement for photography *in situ*! A helper?—yes, of course. Masonic request, sent out at random, brought cordial reply. "Harry H. is just the man you want."

Long before I reached the base of saddle-back the male Falcon had sensed me. Instantly he swept down the heights in a long, incredibly swift sweep, rising at end of his tilt, in one slow curve. The tremulous warning cry, now so well-known, rang out again and again. This entire feint was twice or thrice repeated; and then the slender creature went his swift way to an apparently favored perching crag, on the north side of the butte. Then did the unexpected happen. Out into the sunlight, with strong, excited cries, came the sitting female falcon, from a huge pot-hole not ten feet below the very highest crest of Saddle-back. Down she swept, far past the butte-bottom, and almost to the level of the deep gorge below. Rising again she seated herself beside her mate. Thru the field glass I watched them. Erect sat he, without apparent care. Not so, *she*: with body low-crouched and head hither-turned, she seemed the incarnation of maternal anxiety and vigilance.

Shortly she came hurtling back to the ledges near the nest. The shadow of a hawk-ing Say Phoebe flitted across her body, and she quickly ducked her head. A Sparrow Hawk, whose eggs lay safe hidden in a west-end cranny, made a swift pass at her, but she heeded not the playful challenge. To the photographer the hours of early light are precious. Soon were camera and man both perched upon the steep crags; the camera swathed to a projecting node; the man hanging on by sheer tenacity. No fairer scene ever soothed a fevered sense. Away to the east lay a most beautiful valley. Trees grew there, in cultivated masses. Broad swards, rich of green, stood out in strong contrast with the already blanching growths of the open ranges. Scattered everywhere, were red-roofed barracks and the cottages of the garrison. It was the Fort.

The tackle was a dismal failure. It just tangled up, balked. Then we gave up the *situ*-photography, and went after eggs. An hour of work gave us the ropes untangled, ready for use. Then, while I was preparing a steadying rope for Harry to use in crossing the saddle-hollow, a slight sound made me look upward; and,



EGGS OF THE PRAIRIE FALCON IN SIMULATED SITE

there was Harry carelessly climbing the four-foot-wide crest of the hollow, with a coil of rope in either hand! The big climbing rope remained stubbornly kinky. While I untwisted its two-hundred feet of length, Harry sat on the brink above, kicking his heels into eternity, and watching the falcons. Suddenly a shout from him broke the previous gravity of his demeanor: "*She's gone onto her eggs*". (They were but a short eight feet below him.)

In curiosity he dropped fragment after fragment of the friable rock down upon the lower margin of the pot-hole; but the stout-hearted Falcon never faltered. Nor did she come gliding out, until I came around, in my rope-adjusting, to her side of the butte. *How* did she discern me?

Three times, as I remember, did she come out, alternately, while I was at work, and then returned, without hesitation, to her eggs. Yet Harry's forehead and hair hung each time but eight feet above her eyrie. After interminable preparations Harry was ready for the descent. Two minutes later he was standing upright on the ledge margin of the pot-hole. The cavity was four feet laterally-deep. At the back of it five eggs lay upon the disintegrated rock. It had been planned to have Harry slide down the two ropes to earth. Having duly greeted the "find" I returned to the opposite side of the butte. There was a safety-rope to be held. But, ere I reached it, there came a shout from Harry: "I'm on top!" And there he stood, agrin.

The five eggs of 1906 had been laid about April 20 to 30. The U. of N. date falls about the first of May. The nesting for 1907, quite strangely for a backward Spring, was earlier. Harry wrote me that when he examined the new eyrie, about the 25th of May, there were half-grown young, three of them in the pocket. "My rope," he added, "was five feet too short; but it did not matter." There was fair evidence that our falcons had nested again, in June of 1906. The University record and Harry's note for the current year make at apparent that five eggs are probably unusual for this pair of Falcons.

I have cited one warning note of the Falcons. It will be intelligible, I fear, to none but myself. There are two other cries that might be written down: a rattling, "Kr-r-r-r", with rising intonation; and a peevish, whining "kruk". This I find compared in my note book to a noise made occasionally by flickers, or to one call of the guinea hen.

The prairie Falcon (*Falco mexicanus*) may be considered as fairly common in the butte and the canyon regions of northwestern Nebraska. I found them rare in northeastern Wyoming; tho there was indeed, a pair that nested somewhere in the vicinity of Sundance Mountain. This pair arrived, usually, about the 10th or 12th of April. As is well-known, this Falcon is a terror to poultry. This menace is in no sense confined to the period of family-rearing. While passing thru Sidney, Nebraska, on September 6, I found, strung upon the wires of a hen-ranch fence about a dozen hawks that had fallen victims to the ranch-mans's gun, either thru their own *malice prepense* or because of their fatal similarity to injurious hawks. With two or three Sparrow Hawks, a Red-tail or two, and a young male Marsh Hawk were a predominance of Prairie Falcons. The most of these were normal juveniles. One was a mature bird. But the one that caught my sight at once was what I might call a melano-erythristic juvenile. This was a bird of rare beauty; and keen indeed, was my regret that the bird was utterly rotten. Only the tail and wings could be saved. It is quite probable that these unusual color-phases, in both extremes, are quite commoner than even the savants would have us believe. As for albinism, however, the writer is inclined to believe Mr. Cameron in error (see *The Auk*, July, 1907) in believing that the Swainson Hawk normally blanches with age. I have never seen but one such (in Kansas, May, 1907); yet I have seen many melanists. Moreover, Mr. Cameron has seen hundreds of normals to my one; yet he, by his own admission (*loc. cit.*), has never seen but two blanchd Swainson Hawks!

Blue Rapids, Kansas.

A COLLECTING TRIP BY WAGON TO EAGLE LAKE, SIERRA NEVADA MOUNTAINS

By HARRY H. SHELDON

ON the morning of June 5, 1905, in company with Jim and Stanley Taylor, both enthusiasts in bird-study, I started from Marin County equipped for a three months trip by wagon to Eagle Lake, California. We purposed to collect some of the birds of the Lake and intervening region, and at the same time to enjoy the wilderness that abounds in the northern counties of California.

We had a trip of four hundred miles before us, a trip which proved to be one of the roughest we had ever experienced. A tedious fourteen hours of navigation up the Sacramento River brought us to the capitol city at 4 A. M. We were soon beyond the outskirts of Sacramento and into the big wheat fields of the valley, where after not more than three miles of travel we took our first specimen, a young Yellow-billed Magpie.

Having secured a permit from the Fish Commissioners we were not so wary of being molested by the "don't shoot here" property owners, that were numerous enough along the county roads of the valley. From the second day on we began to take notes, and the long evenings were spent in putting up skins of birds we had anticipated putting in our cabinets. On the fourth day, after traveling thru the intense heat of the valley, we arrived at a beautiful spot at the base of the "table" mountains, the commencement of the Sierras. Here bird-life was at its height. It seemed like entering a large aviary as we walked thru the thick foliage that grew on either side of the creek. Tree Swallows, Kingbirds, Chats, Gnatcatchers, Woodpeckers, Vireos and others were all nesting in numbers; most nests found either contained young, or eggs advanced in incubation.

The thickets of blackberry vines and thistles seemed to be there but for the purpose of a building-site for the Russet-backed Thrush and the Chat. The latter's pleasing whistle was ever to be heard, and above the din, from the throats of the numerous other birds, we would intently listen, at long intervals, to the melodious notes of the California Cuckoo.

After staying a day in this place, having procured some desirable specimens, we moved on to Chico, our last town south of the Sierras. Twenty miles of travel up the oak-covered hills brought us into the big cool timber; here our trip began in earnest, for nature was seen in all shapes and forms, and the names of the mountain dwellers were daily registered in our note books. The tin-horn song (as it impressed us) of the Red-Breasted Nuthatch was the first conspicuous bird-note we heard upon entering the timber, and close scrutiny would find him clinging a hundred or two feet up, on a dead pine. Chickadees, Tanagers, Kinglets, Warblers and Woodpeckers (many varieties of the latter) were seen in numbers, and on rare occasions a Pileated Woodpecker would give vent to his far-reaching call.

After several mishaps that occurred to us especially on the last fifteen miles to the lake, we passed Papoose Valley, a home of the Wilson Phalarope, Wilson Snipe and numerous other water fowl. Three miles from here thru the gigantic pine timber, traveling on nature's path alone, put us on the shore of Eagle Lake, June 26.

Well was it named, for above us, soaring in circles, was a solitary eagle, with his prominent white head and tail, and his dark body outlined against the proverbial turquoise sky.

Going along the shore for a convenient place to pitch camp, Ducks, Geese and Grebes, many with young, scurried out of range into the tules, that in some places afforded nesting sites for the swimmers. Fifty or a hundred feet from shore where the water in late years has risen to a foot or more on their trunks stand scores of bleached and rotten pines, which nature seemed to provide for the sole use of the bird kingdom. Of all the thousands of limbs on these trees I believe each one had been bored into, pecked at or marked in some manner, by the multitude of Woodpeckers, Sapsuckers and Nuthatches that inhabit the forest about the lake. There was ever to be heard the shrill calls and chatter of these wood-dwellers in supplying food for their young, and many interesting sights were observed from our dinner table in camp.

For more than a month we enjoyed the solitude of this beautiful place, where, after our long trip thru valley and mountains, our time was devoted to hunting and fishing, the former including the pursuit of ornithology which was the main feature.

The following list includes species seen on our travels thru Solano, Sutter, Butte, Plumas and Lassen Counties; the identification of the birds and eggs of uncertainty was completed with the aid of Mr. D. A. Cohen, for which I herewith extend thanks.

***Aechmophorus occidentalis*.** Western Grebe. Seen only at Eagle Lake, but quite common there; young with parents seen frequently. One adult taken and a set of four eggs on June 30.

***Podilymbus podiceps*.** Pied-billed Grebe. Common breeder at the Lake; many young seen. We watched a family feeding close to shore in a growth of water lilies and dead tules; when they saw me, each bird sank like a rock until nothing but his small head protruded. July 17, one adult was taken; and one young in down was taken August 1.

***Gavia imber*.** Common Loon. Fairly numerous at the Lake, but very wary and hard to approach. A pair came close to shore on account of a thunder storm and the female was secured.

***Sterna fosteri*.** Foster Tern. Seen along Feather River, Plumas Co., and fairly numerous at the Lake. Found breeding on the northwest side of Lake twelve miles from our camp. Three birds were taken.

***Hydrochelidon surinamensis*.** Black Tern. Very common at Big Meadows, Plumas Co., Papoose Valley, and Eagle Lake. A few sets of eggs were taken at Big Meadows, June 19. Old birds were taken at Eagle Lake and also immatures; one chick in down taken on June 19 at Big Meadows.

***Phalacrocorax dilophus albociliatus*.** Farallone Cormorant. A large colony were breeding in dead pines on the northwest side of the Lake. One bird was taken. A few pairs were breeding on stumps of pine trees one hundred feet out in the Lake on the east side.

***Pelecanus erythrorhynchos*.** American White Pelican. A large colony was said to be nesting at the northeast end of the Lake. As we had no means of getting to the island where they bred, we failed to visit the birds. Stockmen told us that on one occasion they had killed the nestlings with clubs on account of their becoming so numerous. Many birds were seen by us in the Lake.

***Merganser americanus*.** American Merganser. Two or three broods seen at the Lake, one juvenile taken July 14.

***Anas boschas*.** Mallard. Common at Lake; several old birds were seen with young half grown.

***Querquedula cyanoptera*.** Cinnamon Teal. Several flocks seen at Lake. Three

nests were found in a grain field on the northwest side, with 7, 8, and 10 eggs respectively.

Aythya vallisneria. Canvas-back. One was seen alone swimming about four hundred yards from the shore of Lake.

Aythya collaris. Ring-necked Duck. Many seen in pairs, or old with young; always close to shore and not as shy as other ducks; inhabits the lake margins where many dead trees lie in the water. Often seen perched on limbs of dead pines above water.

Branta canadensis occidentalis. White-cheeked Goose. Common at the Lake but hard to approach; many broods seen about half grown.

Botaurus lentiginosus. American Bittern. One was flushed from a swamp in Papoose Valley, June 28. Heard several times at the Lake.

Ardea herodias. Great Blue Heron. Many were seen on rivers; and two nests with young were noted in pine trees with the colony of Cormorants on the northwest side of the Lake.

Rallus virginianus. Virginia Rail. Plentiful in Big Meadows and Papoose Valley. At the latter place a set of eggs was taken. Nest laid in low tules, composed of dry coverings of tules. Also breeding at Lake in fair numbers.

Fulica americana. American Coot. Breeding in large numbers in Big Meadows, Big Springs, Plumas County, and Eagle Lake.

Phalaropus tricolor. Wilson Phalarope. Seen at Papoose Valley and Big Meadows. Two old and one chick in down taken at the former place July 1.

Gallinago delicata. Wilson Snipe. Seen at Papoose Valley July 1, and at Big Meadows June 19.

Actodromas minutilla. Least Sandpiper. Seen at Lake July 11.

Actitis macularia. Spotted Sandpiper. Fairly common at Lake; one set of four eggs found and young in down taken June 28, July 7 and July 11, all about the same age, three or four days old. Always seen flying along rivers and creeks most anywhere in the Sierras.

Ægialitis vocifera. Killdeer. Breeding commonly at the Lake and in Papoose Valley.

Oreortyx pictus plumiferus. Mountain Partridge. Seen only in Big Meadows, on Feather river, where they breed rather plentifully. Three large broods seen August 11.

Columba fasciata. Band-tailed Pigeon. Two birds were seen sitting on the tip of a tall pine in the mountains above Butte Meadows, August 18. None seen at the Lake.

Zenaidura macroura. Mourning Dove. Seen at intervals thru the Sierras; quite numerous at Big Meadows and occasionally shot at Eagle Lake. A few bred at the northwest end of the Lake three miles from our camp.

Cathartes aura. Turkey Vulture. Common at the Lake.

Accipiter cooperi. Cooper Hawk. A male was taken at the Lake August 4.

Buteo borealis calurus. Western Red-tail. A few pairs breed at the Lake. We found a nest in a pine tree on the northwest side, with two half-grown young, July 7.

Haliaeetus leucocephalus. Bald Eagle. One was seen at the Lake June 26 and 27. Was not seen again after we pitched camp.

Falco sparverius. Sparrow Hawk. A few were seen at the Lake and one shot.

Pandion haliaetus carolinensis. American Osprey. Two nests were found at

the Lake, one containing a young bird about half-grown, July 7. The other nest was found June 29. In this case both birds circled about me as I neared the nest, which was placed on the top of a big dead pine. This nest was a large one, at least three and a half feet in diameter and some of the sticks were like small trees in size. Thinking I would have a set later on, I climbed to it again ten days later, but even tho the birds again circled about me, I was disappointed to find it empty.

Ceryle alcyon. Belted Kingfisher. A pair inhabited the shore of Eagle Lake near our camp. One was taken.

Dryobates villosus hyloscopus. Cabanis Woodpecker. Breeding at Eagle Lake. One taken near Butte Meadows June 15. Seen occasionally thru the Sierras.

Xenopicus albolarvatus. White-headed Woodpecker. First seen at an elevation of 6000 feet on the south side of the Sierras. We watched the birds and discovered a nest in a dead stump about twelve feet from the ground. This contained four young about three days old, and one addled egg. While we were around the nest the old birds stayed about one hundred yards away well up in the pines and seemed not at all anxious about their young. The White-headed were by far the commonest of the woodpeckers thru the Sierras and at Eagle Lake. Up to June 22 seven nests had been found, each containing young. Some juveniles and old birds were taken.

Picoides arcticus. Arctic Three-toed Woodpecker. Juveniles were seen at the Lake and an adult male and female taken July 14. A male was taken August 17 on Buck Creek about ten miles from Big Meadows, Plumas Co.

Sphyrapicus ruber. Red-breasted Sapsucker. Common thru the Sierras and at Eagle Lake. July 27 two juveniles and one adult male were taken.

Ceophlæus pileatus abieticola. Northern Pileated Woodpecker. Very scarce and hard to approach. A nest was found containing young almost full grown. This was located in a large dead pine in the dense forest about ten miles from Big Meadows. The nest was located by hearing one of the old birds hammering, which sounded as tho a house was under construction. When I found the nest which was about 75 feet up, I saw a large crimson head protruding, and after I threw up several rocks the bird flew out and was shot. This was one of the young birds, fully feathered, but the plumage was soft and not as bright as the adults. Several attempts were made to make the others leave the nest, but without success. I was about to leave when the old male flew down close and was taken. Also the female and one more young the next day, four in all; two were left, being able to care for themselves. One more adult was taken about five miles from Eagle Lake near Papoose Valley.

Melanerpes torquatus. Lewis Woodpecker. First seen at Big Meadows, Plumas County, where it breeds. Common resident at Papoose Valley; not so numerous at Lake. Most always seen in open glades where there were plenty of grasshoppers. Four taken in July.

Colaptes cafer collaris. Red-shafted Flicker. Few breeding at the Lake.

Phalænoptilus nuttalli. Poor-will. Heard near Popoose Valley and at Eagle Lake.

Chordeiles virginianus henryi. Western Nighthawk. Common at the Lake where a male and female were taken.

Chaetura vauxii. Vaux Swift. Seen at Eagle Lake July 3 when four were flying over camp. Common at Duck Lake 18 miles from Big Meadows on headwaters of Feather River. Five were secured August 8 at the latter-named place.

Stellula calliope. Calliope Hummingbird. Seen in the mountains near Big Meadows and at Papoose Valley. One taken at Eagle Lake on the northwest side, July 5, and one of a pair seen at Papoose Valley taken July 1. Very rare.

Tyrannus verticalis. Arkansas Kingbird. This was a common breeder at Eagle Lake, where it was numerous along shore in dead pines.

Contopus richardsonii. Western Wood Pewee. Occasionally seen in Sierra Nevada Mountains, and a nest found in large pine tree at the Lake July 12. Not common at the Lake.

Empidonax wrightii. Wright Flycatcher. Two sets of four eggs with nests were taken near Butte Meadows June 14. The nests were very beautifully constructed; each was placed in a manzanita bush, and composed of bark fibers of the same, so as to resemble the surroundings. Birds were seen at the Lake.

Cyanocitta stelleri frontalis. Blue-fronted Jay. Common at the Lake; two taken.

Nucifraga columbiana. Clarke Nutcracker. A few flocks seen at Eagle Lake; very wary and hard to approach; only one taken. Always seen in small open glades, surrounded by tall pines, in hot dry country in lava beds. Their chief diet seemed to be grasshoppers and juniper berries.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. First seen at Big Meadows where they breed in large numbers. Eggs and birds taken. A flock of a dozen birds were seen flying at Papoose Valley. Breeding at Eagle Lake on northwest side, 12 miles from camp, in open country in a great growth of tules.

Agelaius gubernator californicus. California Bi-colored Blackbird. Breeding at the Lake.

Sturnella neglecta. Western Meadowlark. One seen in small meadow surrounded by dense forest and far from any open country. Have never seen one in such a place before. Several were seen at the northwest side of the Lake.

Euphagus cyanocephalus. Brewer Blackbird. Several seen at edge of timber at the Lake. Altho no nests were found they must have been breeding, as young birds were frequently seen.

Hesperiphona vespertina montana. Western Evening Grosbeak. Two pairs were taken on Buck Creek, Plumas County, June 17; each pair taken at a different time on this date. No others were seen.

Carpodacus cassinii. Cassin Purple Finch. Seen first at Buck Creek. Breeding at Papoose Valley, and seen at the Lake. Taken at all three places.

Loxia curvirostra bendirei. Sierra Crossbill. Two large flocks were seen at Eagle feeding in Maple trees; twenty-two birds were taken, varying in plumage.

Spinus pinus. Pine Siskin. Seen at Eagle Lake in the latter part of June and July.

Spizella socialis arizonæ. Western Chipping Sparrow. Seen thru the Sierras and at Eagle Lake. A nest with two eggs was found at an elevation of 5000 feet in a greasewood bush two feet from ground, June 25, three miles from Papoose Valley.

Spizella breweri. Brewer Sparrow. Breeding at the Lake; a few sets taken July 6 and 7. Nests built in sage brush close to ground.

Junco hyemalis thurberi. Sierra Junco. Breeding at Lake, where three sets were taken. First set taken June 12 and 14; last set found July 11, the last egg being laid on the day of discovery. Birds taken.

Passerella iliaca megarhyncha. Thick-billed Sparrow. Breeding at Lake. Nine birds taken,

Oreospiza chlorura. Green-tailed Towhee. Seen thru the Sierras quite commonly and breeding at the Lake. Five females and two males taken.

Piranga ludoviciana. Western Tanager. Fairly numerous at the Lake and thru the Sierras. Male and female taken.

Progne subis hesperia. Western Martin. Fairly common at the Lake. Juveniles and adults taken.

Petrochelidon lunifrons. Cliff Swallow. Breeding at the Lake.

Hirundo erythrogaster. Barn Swallow. Breeding at Lake.

Iridoprocne bicolor. Tree Swallow. Breeding at the Lake in dead pines.

Riparia riparia. Bank Swallow. Uncommon at the Lake.

Stelgidopteryx serripennis. Rough-winged Swallow. At the Lake, uncommon.

Lanius ludovicianus gambeli. California Shrike. Seen at the Lake.

Vireo solitarius cassinii. Cassin Vireo. Seen at an elevation of 6000 feet in the Sierras, but not observed at the Lake.

Helminthophila celata lutescens. Lutescent Warbler. Breeding along brushy creeks thru the Sierras and at Eagle Lake.

Dendroica auduboni. Audubon Warbler. Taken thru the Sierras where they were fairly numerous, and at Eagle Lake. Young seen June 14.

Dendroica occidentalis. Hermit Warbler. Very rare; two seen on Buck Creek, Plumas County, one August 16 and one June 17; both were taken.

Geothlypis tolmiei. Tolmie Warbler. Seen thru the Sierras. Taken at Buck Creek June 18, and seen with young at the Lake.

Icteria virens longicauda Long-tailed Chat. Common thru the Sacramento Valley and Sierras. Breeding at the Lake.

Cinclus mexicanus. American Dipper. One shot on the creek in Butte Meadows. Another seen on Susanville River, and a pair seen on Buck Creek, Plumas County.

Oroscoptes montanus. Sage Thrasher. Breeding in sage brush at the Lake on the northwest side. Nine birds were taken July 8, and one set of three fresh eggs; nest placed in sage brush six inches from ground.

Nannus hiemalis pacificus. Western Winter Wren. One seen on Buck Creek, August 16.

Telmatodytes palustris plesius. Western Marsh Wren. Breeding at Eagle Lake; quite common, and several empty nests found. One bird taken.

Certhia familiaris zelotes. Sierra Creeper. Fairly numerous thru the Sierras, and breeding at the Lake. Four taken.

Sitta carolinensis aculeata. Slender-billed Nuthatch. Breeding thru the Sierras and at Eagle Lake; fairly common, and birds taken.

Sitta canadensis. Red-breasted Nuthatch. Breeding thru the Sierras and at the Lake; comparatively numerous.

Sitta pygmaea. Pigmy Nuthatch. Breeding thru the Sierras and at the Lake. Most in evidence of the three species and seen more plentifully at the Lake than elsewhere. Adults and juveniles taken from July 12 to August 1.

Parus gambeli. Mountain Chickadee. Common thru the Sierras, the first being noted at an elevation of 4000 feet; several nests found, all with young. Very close sitters; on one occasion, where the nest was located in a stump about two feet from ground, the bird would not stay flushed and would fly back to the hole with mad chatterings. A few birds taken.

Regulus satrapa olivaceus. Western Golden-crowned Kinglet. Fairly common at the Lake; one was taken.

Regulus calendula. Ruby-crowned Kinglet. One seen and shot near Papoose Valley. Rare.

Myadestes townsendii. Townsend Solitaire. First seen in the timber near Big Meadows. Breeding at Lake. A nest was found near Papoose Valley with two young and one addled egg.

Hylocichla guttata sequoiensis. Sierra Hermit Thrush. Very rare thru the Sierras. One taken near Papoose Valley July 1.

Merula migratoria propinqua. Western Robin. Common thru the Sierras, and breeding at the Lake in quantities. Juveniles taken, and set of four eggs found.

Sialia mexicana occidentalis. Western Bluebird. Juveniles taken June 12 on the Chico Mountains. Breeding at Lake.

Sialia arctica. Mountain Bluebird. Juveniles and adults taken at Eagle Lake. Birds fairly numerous.

A NEW BREEDING BIRD FOR COLORADO: THE CASSIN SPARROW (*PEUCAEA CASSINI*) NESTING NEAR DENVER

By L. J. HERSEY and R. B. ROCKWELL

ON July 14, 1907, while working over the prairie at Barr, Adams County, Colorado, about twenty miles north-east of Denver, in quest of nests of the Mountain Plover, we were fortunate enough to flush an inconspicuous, small brown bird from a remarkably well concealed nest almost under our feet. A careful scrutiny of the *Gutierrezia*, or small rabbit-brush, from which the bird had flushed revealed the nest sunken into the dense foliage of the bush and totally invisible from all points except from straight above.

The nest was built among the closely interwoven stems and branches of the plant, the bottom of the nest resting on the ground but not sunken into it. It was a neat structure when supported by the numerous stems, but when removed proved to be rather flimsy in construction and very fragile. It was composed entirely of dry grass blades and stems, weed stems and bark, and vegetable fibers, lined with fine grass blades and a very few fine grass stems. The nest was unusually deeply cupped, with the sides built perpendicularly and slightly rimmed in. It measured as follows: outside, $3\frac{1}{2}$ inches in height, 4 inches in long diameter, and $3\frac{1}{2}$ inches in short diameter; inside, depth of nest cavity from rim of nest $2\frac{1}{2}$ inches, short diameter 2 inches, and long diameter $2\frac{1}{2}$ inches. The circumference of the inside of the rim was slightly less than that of the cavity where the eggs lay. The rim of the nest was not symmetrical but varied in height and thickness to conform to the branches among which it was placed, and altho built near the outer edge of the bush was supported and concealed on all sides by the spreading branches of the plant, which was about 10 inches high and 18 inches in diameter.

The bush in which the nest was built was located on a small knoll about 75

yards from the shore of Barr Lake, a body of water covering about 1000 acres, but was on ground that was always dry, and of the same nature as the prairie land farther removed from the water.

The female bird after flushing, flew about 50 yards and lit on a bunch of soapweed, where it stayed while the nest was being examined. It did not exhibit any particular uneasiness further than an occasional chirp, and made no demonstration.

The four pure white eggs immediately attracted our attention and as we did not have a collecting gun with us at the time we left the nest intending to return and collect the birds. In the afternoon we returned and carefully approached the



SITE (AT X) OF CASSIN SPARROW'S NEST, NEAR DENVER,
COLORADO

nest, but the female must have heard us and slipped away thru the thick brush, as she was not on the nest nor did we catch sight of her. Upon our return, about an hour later, the bird flushed from between us when we were within two feet of her. During all three of our visits to the nest we had occasionally heard the delightfully sweet, liquid, tho subdued song of the male, but had not seen him; but as the female left the nest she flew directly to the soapweed mentioned before, and was there joined by the male.

Between our first and second visits reference to text books had satisfied us that the bird could be no other than the Cassin Sparrow (*Peucaea cassini*) and consequently a new breeding record for the state and the second record of the species occurring within the state boundaries. It was therefore with a mixed feeling of regret and exul-

tation that we collected the two birds, photographed and then removed the nest and eggs, thus putting an end to the pretty family picture.

The eggs, as has been mentioned, were pure crystalline white with an unusually high polish for sparrow's eggs, more pointed than is usual for eggs of this family, and measure .76x.55, .81x.58, .77x.57 and .79x.57 inches. On blowing, two proved to be perfectly fresh and two showed very slight blood veins. Mr. H. G. Smith, who prepared the birds, states that both were in badly worn plumage, and the abdomens of both birds were entirely bare of feathers, a fact which might possibly indicate that this was a second set,

During the three weeks following the date upon which the nest was found we paid especial attention to the sparrows observed, and on each of the three trips over the section surrounding the nesting site we were fortunate enough to see several of the birds, only one of which was taken however, as in every other instance save this one we were positive of our identity without taking the birds. It is practically impossible to derive any deductions from our observations as to whether the bird occurs regularly or whether we simply happened on to a community of them, but we are positive that we saw at least a dozen individuals in a radius of two miles surrounding the spot where the nest was found.

On one occasion Mr. Hersey saw one of the birds going thru their characteristic performance of rising perpendicularly into the air and slowly descending in full song. Dr. Heermann in speaking of this peculiarity of the species describes it as rising with a tremulous motion of its wings some twenty feet or more and then descending again in the same manner to within a few yards of the spot whence it started and accompanying its entire flight with a lengthened and pleasing song. This peculiarity, while mentioned by nearly all authorities, was seen by us only once, probably on account of the lateness of the season.

Prof. W. W. Cooke in his Second Appendix to *The Birds of Colorado*, in speaking of the habitat of this species, quotes from the A.O.U. Checklist, as follows: "Central and Western Kansas, southward and westward thru Texas, New Mexico, Arizona and Southern Nevada," and further says: "It would be difficult to have a bird a rather common summer resident over the west half of Kansas; also common in New Mexico at the same season, and not have it occur in southeastern Colorado; but up to the present time (1900) no one has found it in the state."

This surmise was later verified by Mr. E. R. Warren who published the following, which is an extract from "A Collecting Trip in Southeastern Colorado" (CONDOR Vol. VIII, No. 1; January, 1906). Under the heading of Cassin Sparrow, he says, "A specimen of this species was taken May 27th near Springfield [Baca County]. The bird was on a wire fence near Cat Creek south of the town. Its breast was quite bare of feathers so that it may have been incubating."

Col. N. S. Goss in his *History of the Birds of Kansas* classes it as "Summer resident; in the middle and western part of the state, common. Arrives about the middle of May, begins laying early in June and leaves in September."

These statements seem to establish the fact beyond question that the extreme northwestern limit of the Cassin Sparrow as it is known at present, is the western boundary of Kansas, but the above records for Colorado and the finding of nest



NEST AND EGGS OF THE CASSIN SPARROW

and eggs fully 150 miles west of the Kansas line, unless purely accidental, would seem to indicate the possibility of the birds occurring more or less commonly thruout the eastern half of Colorado; a question which can only be definitely settled by extensive and accurate observation.

Denver, Colorado.

SOME BIRDS OF SOUTHWEST COLORADO

By M. FRENCH GILMAN

(*Concluded*)

***Petrochelidon lunifrons*.** Cliff Swallow. Common, nesting under eaves of buildings and on cliffs. Down the La Plata River near the New Mexico line I saw several holes in a cliff, containing the swallows' nests. These nests would completely fill the shallow holes, six or eight nests being required to close the entrance of some.

***Tachycineta thalassina lepida*.** Violet-green Swallow. Numerous, breeding in holes in the pines. I saw several spirited fights between two birds that wanted the same nesting site. I stood against the tree trunk and watched the birds "lock horns" at the entrance of the hole and slowly flutter and fight, revolving the while till they reached the ground. Several times I think I could have scooped them in with a butterfly net.

***Lanius ludovicianus excubitorides*.** White-rumped Shrike. Several seen at Fort Lewis; common about Cortez.

***Vireo gilvus swainsoni*.** Western Warbling Vireo. Common. Nests frequently seen in alders and cottonwoods near the river.

***Dendroica æstiva*.** Yellow Warbler. Common, nesting along the river bottoms.

***Dendroica auduboni*.** Audubon Warbler. Common, nesting from 7,500 feet to about 11,000 feet.

***Geothlypis tolmiei*.** Tolmie Warbler. Common. Nesting in river bottom and along irrigating ditches.

***Icteria virens longicauda*.** Long-tailed Chat. One seen near Durango.

***Wilsonia pusilla pileolata*.** Pileolated Warbler. Rather common.

***Anthus pensilvanicus*.** Pipit. Arrived April 30, soon leaving for higher altitudes. July 22 I saw two pairs in a ten-acre patch of blue columbine (*Aquilegia cærulea*) at an altitude of over 12,000 feet. From their actions I judged a nest was near; but patient search failed to reveal it.

***Cinclus mexicanus*.** Water Ouzel. Seen by Mr. Peterson on the La Plata River several miles below Fort Lewis, and also on the Animas River near Durango.

***Oroscoptes montanus*.** Sage Thrasher. Found nesting from Cortez to Navajo Springs, in May and June.

***Mimus polyglottos leucopterus*.** Western Mockingbird. Seen only in the vicinity of Navajo Springs where one nest was found and five or six pairs of birds seen.

***Galeoscoptes carolinensis*.** Catbird. One seen at Mancos, May 31. Two pairs

stayed around Ft. Lewis during the nesting season, the males singing frequently from dense oak brush on the hillside. When I first heard one I thought a progressive grosbeak had evolved a better song; and then I wondered why he was not on top of the oaks instead of in the center. A careful scrutiny revealed the owner of the lay, but failed to find anything that had been laid.

Toxostoma rufum. Brown Thrasher. Mr. Peterson told me a pair of these birds nested in a gooseberry bush near his house in the spring of 1904.

Salpinctes obsoletus. Rock Wren. Seen occasionally. A pair nested under a plank sidewalk near the school house at Ft. Lewis.

Catherpes mexicanus conspersus. Canyon Wren. One seen early in the morning on top of the barn.

Thryomanes bewickii leucogaster. Baird Wren. A few noticed during the breeding season.

Certhia familiaris montana. Rocky Mountain Creeper. A pair seen during a snow storm in January, 1906, and a pair near the same spot in January, 1907.

Sitta carolinensis aculeata. Slender-billed Nuthatch. Common, breeding on the pine-covered mesas.

Sitta pygmaea. Pigmy Nuthatch. Abundant. Many nesting near the school in dead pine trees. Three nests noted were built just below and at one side of deserted woodpecker holes occupied by bluebirds—only 8 inches between the doorways. It may have been for the companionship and protection afforded by the bluebirds, but I am inclined to think the nuthatch had confidence in the woodpecker's judgment in selecting a good place to dig. A feature of the nuthatches' nests was the fact that usually the hole after going in straight, turned to the right of the entrance before descending.

Parus inornatus griseus. Gray Titmouse. One pair seen in April. Mr. Warren reports them as seen at Coventry in April.

Parus atricapillus septentrionalis. Long-tailed Chickadee. A few breeding in the neighborhood.

Parus gambeli. Mountain Chickadee. Breeding abundantly.

Psaltriparus plumbeus. Lead-colored Bush-tit. Mr. Warren reports them at Coventry in April.

Regulus calendula. Ruby-crowned Kinglet. Several seen in spring.

Myadestes townsendi. Townsend Solitaire. Several noticed at different times of the year.

Hylocichla guttata auduboni. Audubon Hermit Thrush. Found nesting in the La Plata Mountains in July, at 10,000 feet altitude. Seen in spring along the river bottom.

Merula migratoria propinqua. Western Robin. Abundant. Nesting from 7,000 to 10,000 feet. Some must spend the winter as I saw one on January 30, within a mile of Ft. Lewis, and saw others in January in Montezuma County.

Sialia mexicana bairdi. Chestnut-backed Bluebird. Several nesting near Ft. Lewis among the pines.

Sialia arctica. Mountain Bluebird. Most abundant of the bluebirds. Nested about buildings and in bird boxes, while the two other species kept to the pines. A pair, the female having but one leg, raised broods in the cornice of one of the buildings, and I was told they had occupied the same place for at least the two seasons previous. One bird box I put up had two families started in it in one season.

Banning, California,

SUMMER NOTES FROM AN ARIZONA CAMP

By AUSTIN PAUL SMITH

WHETSTONE Mountains, Arizona, August 20, 1907.—This being a very dry year and most of the Thrasher species enjoying aridity, I ascribe as a reason for *Toxostoma crissale* ranging up to 6000 feet in numbers, and even breeding at that altitude, having found nestlings at 5500 feet in the latter part of May. At Benson, Arizona, 3500 feet, full-fledged juveniles were found April 20, and eggs May 2 and 3. But one Palmer Thrasher (*Toxostoma curvirostre palmieri*) has ventured into the mountains, and this one really only into the foothills at 4000 feet. The Bendire Thrasher (*Toxostoma bendirei*) seems to have a defined limit where the oaks begin. However, in the San Pedro River region, it is my opinion that it outnumbers both its relatives. It may be germane to the subject to note that two adults of *T. bendirei*, shot while leaving their nests containing eggs, proved females.

When I reached the mountains on May 6th, the Scott Oriole (*Icterus parisorum*) was to be seen or heard everywhere. A month later an occasional Arizona Hooded Oriole (*Icterus cucullatus nelsoni*) was to be seen in the canyons; but not until July 1, and the advent of the agave blossoms, was it prominent. Only one Bullock Oriole (*Icterus bullocki*) has been noted up here, a female on July 2. On August 15 both *nelsoni* and *parisorum* were still abundant in the oak region.

Of the Tanager trio, May 10 marked the first arrival of *Piranga ludoviciana*. From that date until June 2, it was quite well distributed, mostly above 5000 feet, and in mixed flocks of Scott Orioles, Black-headed Grosbeaks and Lazuli Buntings. They reappeared August 12, at 4500 feet elevation. *Piranga rubra cooperi* never came up higher than the outlying live oaks, and then but occasionally. Yet only eight miles away in the San Pedro Valley it is in summer as common as the Vermillion Flycatcher. *Piranga hepatica* was first observed May 17. All those seen for the first month or more, in fact some taken in July, show very little red in the males. They are evenly distributed over this range, quite as abundant at 4500 feet as at 6500 feet.

I have had the pleasure of observing four members of the Caprimulgidae about my camp at 4500 feet. Western (*Chordeiles virginianus henryi*) and Texas (*Chordeiles acutipennis texensis*) Nighthawks were both abundant at intervals, as were also the Poorwill (*Phalaenoptilus nuttallii*) and Stevens Whip-poor-will (*Antrostomus vociferus macromystax*). This last seems quite numerous, much more so than in the Huachuca Mountains. Among the examples secured one ♂ shows no trace of buff on the throat. (No. 5451, elev. 4500 ft., June 26, 1907; L. 9.85, W. 6.43, T. 5.) My Stevens Whip-poor-wills (4 in all) were obtained near the same spot—a ravine in which runs a narrow rivulet of water over a sandy bed. When the required degree of darkness had arrived *macromystax* would come flying down from the higher elevations and alight parallel with the stream, and by a queer lateral movement of the neck, proceed to drink, often remaining in such a position several minutes.

In August a female Scaled Partridge (*Callipepla squamata*) was taken with an egg ready to be laid. However, at that date, almost full-grown birds are the rule. Between 4000 and 4500 feet three species of Partridge may be found at times. *Callipepla squamata*, Mearns Quail (*Cyrtonyx montezumae mearnsi*), and Gambel Partridge (*Lophortyx gambeli*), and in wet years undoubtedly the Masked Bobwhite (*Colinus ridgwayi*). The latest record for this rare bird was in August,

1906, when Mr. F. E. Trask, City Marshall of Benson, secured five birds near Lone Mountain, between the altitudes above indicated. *C. m. mearnsi* is quite in evidence—at times. The first young I met with was on August 6. They must be very irregular breeders, for even now, in the latter half of August the adult birds are still to be seen in pairs. Acorns or mast and ladybeetles, is the prevailing fare hereabouts. The Scaled Partridge sticks to the Mexican Poppy (*Argemone mexicana*) almost entirely at this season. While the Gambel Partridge haunts the canyons where certain crossworts (Crucifers) grow.

I was surprised to find the Elf Owl (*Micropallas whitneyi*) so abundant, and up to 5000 feet, too. They furnish a good share of the night sounds here. On a moonlight evening you may observe them, little flocks of five or ten, often in a single tree. Moths (which during June were very numerous) form a substantial food supply. They catch the moths much in the manner of a flycatcher, returning to their original perch. One bird I shot had an immense sphinx, almost the wing dimension of the bird, in his bill. They also secure quantities of Longicornes (beetles), but I have found no evidence of their preying on birds.

About camp we have twenty White-winged Doves (*Melopelia leucoptera*) to one Mourning Dove. The former species is another bird very fond of Argemone seed and its distribution is no doubt affected by it.

The Coues Flycatcher (*Contopus pertinax pallidiventris*) is very rare in these mountains, at least this year. I secured a bird of this species in the Rio San Pedro valley on April 18, last.

Benson, Arizona.

FROM FIELD AND STUDY

Colorado Notes.—Hon. James Cowie, while hunting ducks on a lake northeast of Bouldér, on September 15, 1907, saw a flock of six birds which he failed to recognize and shot one for identification, turning it over to the University of Colorado. It proved to be an immature Sabine Gull (*Xema sabinii*). Altho Capt. Berthoud reported that the species was common in the early days of the settlement of the State, I only find six actual records prior to this one, all but one being from the plains near the eastern base of the mountains from Denver northward, the other being from Breckenridge, at an altitude of 10,000 feet. Whatever may have been the case as a matter of past history, the species is certainly rare enough hereabouts in recent years.

On September 14, 1907, while passing Church's Lake a few miles north of Denver, I noted several White-winged Scoters (*Oidemia deglandi*) within a few feet of the train, with some other ducks and coots. After allowing time to make sure of their identity, but before I had counted them, the birds all took flight, but there were not less than half a dozen of the Scoters. I find but nine previous records for the State, all October and November records.

The Wood Duck (*Aix sponsa*) is a rare duck in Colorado nowadays. I have heard of none recently except three killed near Boulder by Hon. James Cowie and Mr. Bert Werley about three years ago, no record having been made of the date. I have seen two of the specimens.

There seems to be but one record of *Syrnium varium* in the literature of Colorado ornithology; so I have hesitated about mentioning a note which I find in the note-books of Denis Gale. He mentions having seen a pair in the valley near Boulder in 1886, but gives no particulars and no exact date. The note was made three years afterwards, in 1889, when he says he looked again for the pair which he had seen there three years before but failed to find them. Upon careful consideration I have concluded that his identification was probably correct, as he was quite familiar with the owls of the region, and there is no other that he would be apt to mistake for this. The Spotted Owl (*Syrnium occidentale*) which might be easily mistaken in the field for the Barred Owl, is a species of the southwest, coming only into southern Colorado, so that the eastern species is much more likely to be found east of the Front Range and in the northern part of the State. However, with these rare records, one never feels safe unless the circumstances under which the birds are seen, the opportunity for careful inspection, the condition of the light, etc., are known.—JUNIOUS HENDERSON, *Museum, University of Colorado, Boulder, Colo.*

Notes From Colton, California.—On May 19, 1907, I found a Phainopepla's (*Phainopepla nitens*) nest containing one egg. Two days later there were no additional eggs. May 24 I noticed the female bird on the nest but did not climb the tree to see if there were any more eggs. May 30, or six days later, I noticed a Mourning Dove (*Zenaidura macroura*) on the nest, and upon investigation found two dove eggs resting upon a slight platform placed on the Phainopepla's nest. I thought that this was rather rapid home changing.

A nest of the Valley Partridge (*Lophortyx californicus vallicola*) containing fifteen eggs was found June 1, in an unusual location. The bird selected a place under a small pile of eucalyptus twigs 25 feet from Pennsylvania Avenue and four feet from Olive Street, both being well-traveled village streets. A concrete flume was within sixteen inches of the nest and workmen walked along the flume many times daily while irrigating an orange orchard. A calf was tied to a tree at the edge of Olive Street, and it had also selected a resting place in the brush pile three feet from the bird. The calf could have put its hind feet in the nest if it had desired to do so. The calf was fed regularly by a man, woman or child. Across the street, ninety feet from the nest was a house. Several small children and a dog played around the yard and often came over to visit the calf. (They did not know about the nest, as the bird would not flush unless in danger of being stepped on.) June 10, I visited the nest and found that the bird had departed. Two piped eggs were in the nest and one little dead bird in the flume. Probably the others got away all right.

During August I had the pleasure of seeing an albino Brewer Blackbird (*Scolecophagus cyanocephalus*). I would say that about two-thirds of its feathers were white. About a week after I first saw the bird, I learned that it spent considerable time in company with other blackbirds on certain lawns here in Colton. The other blackbirds did not seem to treat it differently because of its white coat. A friend of mine informs me that he saw a white blackbird at San Jacinto Lake eighteen or twenty years ago. Talking about white blackbirds sounds like discussing white lamp-black!—W. C. HANNA, *Colton, California.*

Concerning a Few Abnormally Marked Eggs.—During the last few years the writer has collected several sets of eggs which are of special interest owing to the fact that they are thickly spotted with fine brown spots, where nature's usual prescription calls for unmarked eggs.

The first case is a set of Green-backed Goldfinch (*Astragalinus psaltria hesperophilus*) taken near Escondido, San Diego County, California. There are three eggs in the set. Two are normal but the third is larger and thickly spotted about the broader end with many fine peppery spots. I found another set of three eggs of this species in 1905 in which every egg of the set was marked; but owing to the very advanced stage of incubation they were not collected.

In 1906 I found a nest of Lazuli Bunting (*Cyanospiza amœna*) in the midst of a patch of iron weed. It was only about a foot high from the ground and fastened to very slender stems. I flushed the bird but could not identify her as she darted thru the weeds. Upon looking into the nest I found four well-marked eggs. Altho I had collected for a number of years in this same locality I had never met with anything of this style before. I thought it must be something new, so quietly hid in some nearby willows to await the return of my bird. In about half an hour I saw her slipping thru the weeds and onto her nest, while her mate lit in a bush near by. To make sure of my own eyes I collected both birds, for I could hardly believe that they were Bunting eggs altho the birds were before me. The eggs were normal in every way except for the spots.

Last spring I discovered a Plain Titmouse's nest on the University campus. There were eight eggs in the cavity and all were more or less speckled with these same brown spots. They resemble very much the markings on a Black Phœbe egg.

Whether this subspecies of Titmouse, namely *Bæolophus inornatus inornatus* is in the habit of laying spotted eggs I cannot tell, for I have collected but one other set, and this was plain white. I doubt that the majority are anything but plain white. However, I shall watch with interest to see if this pair of birds return to last year's nesting site and lay spotted eggs.

It seems to me that here is a question for students of evolution: Are some of our birds which lay in the open going to lay spotted eggs in the distant future, or are these spots a remnant of the distant past. It would seem that spots on the eggs of birds which lay in cavities were of little benefit, hence the spotted Titmouse eggs may be remnants of the past; but who can tell?—NELSON K. CARPENTER, *Stanford University, California.*

Gray-headed Junco in the Cuyamaca Mountains, California.—On November 18, 1906, following a heavy snow-storm, at Julian, San Diego County, California, altitude 4100 feet, great numbers of Juncos appeared, altho one species, *Junco h. thurberi* was found in small numbers, since the early part of September. These flocks were made up of the species just named, and *Junco caniceps*, the last in the minority, but still in sufficient numbers to be noted in every flock. I left the mountains on December 3, and up to that time observed *Junco caniceps* almost daily.—AUSTIN PAUL SMITH, *Benson, Arizona.*

Passer domesticus.—In going thru a colony of Cliff Swallows two years ago, I found two sets of eggs of the English Sparrow. The sparrows had taken possession of the nests of the swallows when the outside walls were finished and furnished the interior to suit their own taste—a lining of a few straws, on which were laid, in one, a set of five eggs, in the other a set of six eggs.

A half block from my house in Santa Rosa, on Lincoln street, is a row of small maples at the edge of the sidewalk. On the third tree from the corner of Morgan street, there is a rotten stub two feet long with a woodpecker hole at the top end. In passing by on my way to work, last month, I several times flushed a bird from this stub, and was about ready to make a night attack on same, when one morning in passing by, I again flushed the bird. It stopped this time and perched in the tree close to the nest so that I got a good look at her. My desire to make the climb up the tree and cut off the stub for something rare was chilled. It was a female *Passer domesticus*.—H. F. DUPREY, *Santa Rosa, California.*

Correction.—In THE CONDOR for July, 1907, page 110, I recorded the "Mew Gull" as having been taken by me at Alamitos Bay, Los Angeles County, California, April 14, 1907. After careful comparison with examples in the collection of Mr. Grinnell, the specimen in question is now determined to be the Pacific Kittiwake (*Rissa tridactyla pollicaris*). In making the original erroneous record I was too hasty in forming an opinion.—C. B. LINTON, *Los Angeles, California.*

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

JOSEPH GRINNELL, Editor, Pasadena.
J. EUGENE LAW, Business Manager, Hollywood
WILLIAM L. FINLEY } Associate Editors
JOSEPH MAILLIARD }

Pasadena, California: Published Nov. 15, 1907

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States Mexico, and U. S. Colonies, payable in advance

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other countries in the International Postal Union.

Claims for missing or imperfect numbers should be made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the Editor.

Advertising Rates on application.

EDITORIALS

The other day we received for publication in *THE CONDOR* an article which filled us with the joy of approval. The subject-matter was good, and that was appreciated; but what aroused our immediate admiration was that it was in every way in a form to forward to the printer at once without our having to make a single correction or alteration.

To begin with, this article was written on only one side of the paper; a left-hand margin of an inch or so was considerably left on each page, so that we found space to write instructions to the printer; the text was paragraphed and indented properly; altho written by hand, it was clearly legible—type-writing would have been but little plainer; the author had taken pains to punctuate, capitalize and spell correctly (what a *rare* instance!); the author had looked up the style we were accustomed to use in running general (10-point) articles, and he had put the title at the head followed directly beneath by his name, and at the end of his article he had written his home address.

Now, if all the articles submitted for publication were as carefully written as this ideal, what a "snap" an editor would have. He could put in his extra time in studying how to improve the make-up of his magazine instead of grinding away evening after evening correcting, or re-writing, carelessly composed manuscript.

Contributors, get the idea?

In retiring from the Business-Management of *THE CONDOR*, Mr. H. T. Clifton leaves the

affairs of the magazine in a better condition financially than it has ever known before. The routine drudgery of the work has been performed uncomplainingly, and only unavoidable demands upon his time from another source have now compelled Mr. Clifton to insist on resigning. The Editor takes this opportunity of acknowledging the cordial cooperation and active help always freely granted him by Mr. Clifton whenever called upon. And we want our fellow Cooper Club members to remember that a very large proportion of whatever of success our magazine attains is due to the exertions of the Business Manager.

Mr. J. Eugene Law has been elected to the office of Business Manager of the Cooper Ornithological Club. This means also, of course, that the affairs of *THE CONDOR* are from now on under his direction. Mr. Law brings into this work a banker's knowledge of business methods, and we feel confident that the Club may expect continued growth in the size and mechanical quality of our magazine. Let it be remembered that henceforth all subscriptions and dues should be paid to J. EUGENE LAW, HOLLYWOOD, CALIFORNIA.

The index to Volume IX, printed as part of this issue, was prepared by Mr. Walter P. Taylor.

Don't forget that the price of this magazine is now \$1.50 per year, and that subscriptions will not be accepted for less. The Club dues remain the same as before—\$2.00.

One of the most enjoyable events in the Club's history was the Southern Division meeting held at Pasadena, October 3, 1907, reported in another column. The members had the pleasure of meeting Dr. C. Hart Merriam, and Mr. and Mrs. Vernon Bailey, who are now carrying on Biological Survey work in southern California. Dr. Merriam told in a fascinating manner many of the California Indian legends pertaining to birds.

Mr. Harry S. Swarth, of Chicago, author of "The Birds of the Huachuca Mountains, Arizona," is now doing bird work again in Arizona. This time he is exploring the Santa Catalina and Chiricahua Mountains.

Dr. Walter K. Fisher, of Stanford University, has been granted a leave of absence for the first semester, and is spending the time in Washington, D. C.

During July, Mr. G. Frean Morcom visited Chicago and the bird men of that city.

Mr. G. Willett took an ornithological outing into the San Bernardino Mountains in June, where the Editor also spent nearly his whole summer vacation.

As for 1908, we have already on hand some strong, healthy articles, with striking photos. The ending and beginning of volumes will mark no metamorphosis in the character of our Magazine; we expect to continue to publish fresh western ornithology.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

SEPTEMBER.—The September meeting of the Northern Division of the Cooper Ornithological Club was held in the rooms of the California Promotion Committee, Union Square, San Francisco, on Saturday evening, September 21.

Dr. Frederick W. D'Evelyn, President of the Club, read a most interesting paper on the "Locust-eating Birds of the Transvaal". His paper, which will appear in *THE CONDOR*, was most acceptable in the reading by reason of the vein of dry humor running thru his informal remarks in which he occasionally digressed as some incident of his life in South Africa was recalled. Dr. D'Evelyn was in South Africa in the days of the first Boer War in the early '80s. His memory of the bird life of those days has been verified by correspondence with British ornithologists now working over that region.

Miss Bertha Chapman, Vice-President, presented "A Plan to Widen the Scope of *THE CONDOR*".

Miss Chapman pointed out that the teachers in this state in connection with their nature study work in birds have no publication to which they can refer for a simple description of the commonest local species. An eastern publication affords teachers of the Atlantic Coast and Mississippi Valley this information, but does not give the species needed by the California teacher for her-class room work. Some publication must sooner or later supply this demand. If *THE CONDOR* devoted a page or two in each issue with illustrations it would not only increase its circulation among teachers but would meet with as large a sale on the news stands as does the eastern publication.

A discussion followed Miss Chapman's paper, as to ways and means of putting such a plan into effect. The conclusion reached, seemed to point to the adoption of *THE CONDOR* as the official organ for bird study by the State Board of Education, and with this increased subscription list, a salaried Editor and Business Manager.

After this discussion the Club held a short business session. The resignation of R. E. Snodgrass was accepted. Further election of members went over until the next meeting. Meeting adjourned.

ROSWELL S. WHEELER, *Secretary*.

SOUTHERN DIVISION

SEPTEMBER.—The postponed September meeting of the Cooper Club was called to order by President Morcom, in the Faculty Room, Throop Polytechnic Institute, Pasadena, Cal., Thurs. evening, Oct. 10, with the following visitors

present: Dr. C. Hart Merriam, Vernon Bailey, Mrs. Vernon Bailey, Mrs. Elizabeth Grinnell, Mrs. Joseph Grinnell, President Chamberlain and Dean B. F. Stacey of Throop Institute, Walter Richardson, Mrs. C. E. Cosper and Lloyd Cosper; and members Miss Olga S. Tarnell, J. Grinnell, O. W. Howard, Lee Chambers, V. W. Owen, Prof. Loye Holmes Miller, M. French Gilman, H. T. Clifton, W. B. Judson, C. E. Cosper, Alphonse and Antonin Jay, Walter Taylor, W. Chamberlain, Chas. Richardson, Jr., and Law.

Applications for membership were proposed: R. Magoon Barnes, Lacon, Illinois, by W. Lee Chambers, and Cyril H. Bretherton, 622 Bryson Bldg., Los Angeles, California, by J. Eugene Law. In accordance with the By-laws, action on these was deferred till next meeting. The matter of an outing meeting was referred by motion to Messrs. Morcom, Lelande and Law, with authority to make all arrangements to have an outing in October.

Dr. C. Hart Merriam was then introduced by Mr. Morcom and spoke at length, giving many interesting anecdotes of bird and bird-observing life. Dr. Merriam has just returned from the Klamath Lake region, where he has been doing Biological Survey work. Few of our California ornithologists are as familiar with the topography and plant and animal life of the length and breadth of the state as is Dr. Merriam, and his opportunities for observation in the long period he has been at biological field work have been exceptional. He usually arrives in California from the East for active field work in July, and we all know of his zone boundary investigations. Not the least interesting were his stories of Indian bird-lore. It seems that Indian legends having to do with birds and how certain characteristics were acquired, are very rich, and Dr. Merriam has no end of interesting stories at his tongue's end. Before closing he took occasion to emphasize the value of the work being accomplished by the bird student who learns his own locality and records the habits of its birds year after year under similar conditions.

Mr. Vernon Bailey gave a short talk about his work with Dr. Merriam, but the lateness of the hour cheated us out of the longer talk we had hoped for. Mr. Bailey drew special attention to the interesting problems which Southern California presents in bird distribution, owing to its abundance of mountains, passes, coast line and country between. Mr. Morcom, in calling on Dr. Merriam, emphasized a precedent long since become a custom, and that is, that our always-welcome ornithological visitors only have one condition exacted from them—that of cheerfully answering the dozens of questions we are sure to ask them.

Mr. Virgil Owen exhibited a few interesting screech owl skins from Arizona, including some of the smaller forms. Adjourned.

J. EUGENE LAW, *Secretary*.

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GINN & COMPANY, Publishers

Boston New York Chicago London

THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Edited by
Joseph Grinnell

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Associates

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Business Manager

Volume X
1908



Published Bi-Monthly
by the
Cooper Ornithological Club of California
Hollywood, California

THE CONDOR

A Magazine of Western
Ornithology



Volume X

January-February, 1908

Number I



W.K.V.

COOPER ORNITHOLOGICAL CLUB


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Entered as second-class matter May 1906 at the post office at Pasadena, California,
under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, First National Bank Building, Hollywood, Cal.

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In sending in renewals for 1908 please note that the price of THE CONDOR is now **\$1.50** per year in the United States, Mexico and U. S. Colonies.  **\$1.75** per year in Canada and all other countries in the International Postal Union.

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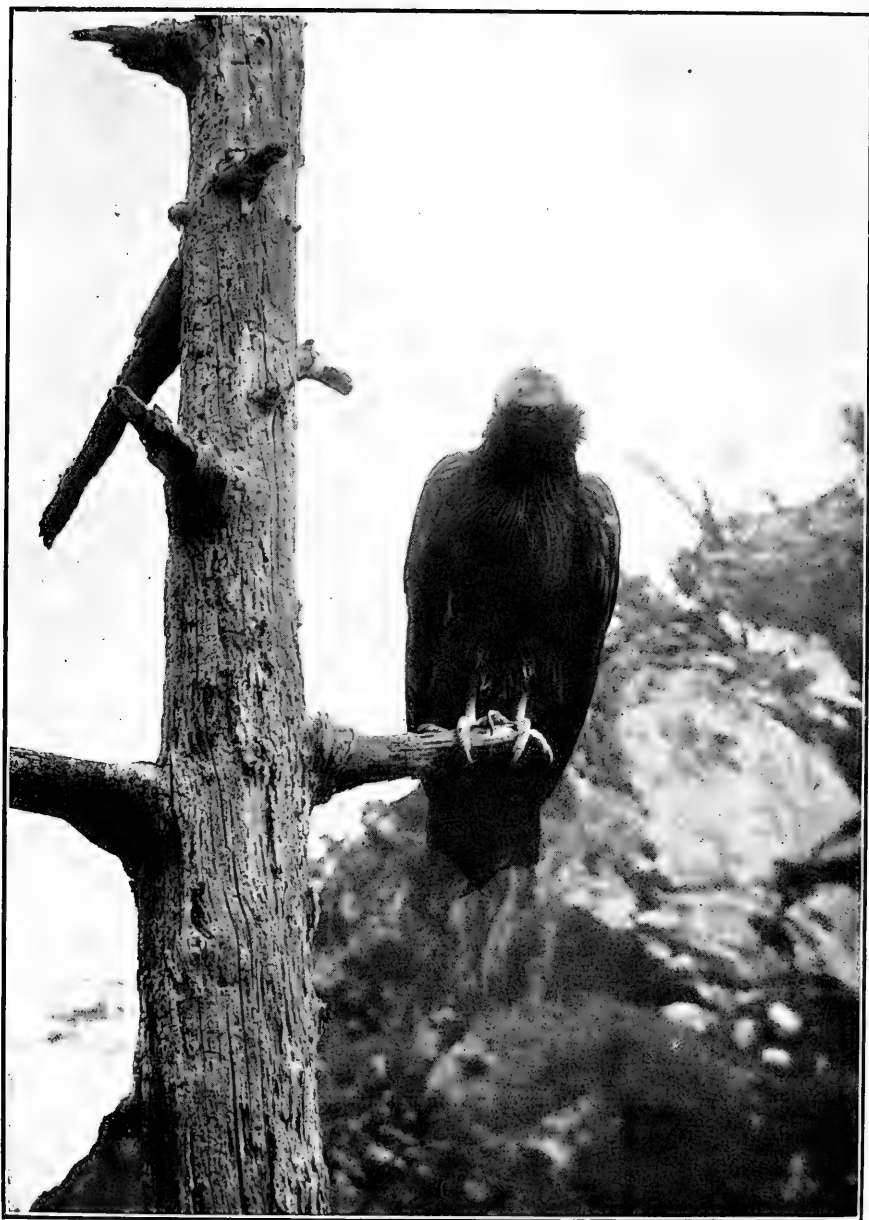
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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume X

January-February 1908

Number 1

LIFE HISTORY OF THE CALIFORNIA CONDOR PART II.—HISTORICAL DATA AND RANGE OF THE CONDOR.^a

By WILLIAM L. FINLEY

WITH PHOTOGRAPHS BY HERMAN T. BOHLMAN AND THE AUTHOR

THE report that the California Condor (*Gymnogyps californianus*) will soon become extinct is not without foundation. It has a range more restricted than any other bird of prey. Since the time when the western part of the United States was settled, the breeding range has contracted, and the condor's numbers have greatly decreased; altho it is still found in the wilder mountainous sections, it is nowhere common.

Formerly the California Condor was frequently seen about the mountainous regions of central and southern California. The birds were fearless and tame about their nesting places. There are many records of their being shot merely because they furnished good marks for irresponsible hunters who wandered thru these mountains.

The main cause which has been given for the decrease in condor numbers seems to be that when stock raising became common in California years ago, in order to secure pasture during the dry months, the rangers were compelled to drive their herds back into the more remote mountainous parts. Here they invaded the retreats of panthers, grizzlies, and coyotes. These preyed upon calves and sheep and created considerable damage. The quickest and best way of getting rid of these animals was by baiting the carcasses with poison. Since the condors came to feed on the poisoned animals, numbers of the big birds were undoubtedly killed in this way.

Almost any other bird might hold its own in the struggle for existence against

^a NOTE—My first article on the Life History of the California Condor was published in the Nov.-Dec., 1906, number. Since then Mr. W. Lee Chambers, who has been collecting data on the California Condor for several years, has kindly loaned me his notes and I have embraced some of these in the following article, which will be followed by a third article on the home life and habits of this bird.—W. L. F.

these forces, but the condor is too slow in recuperating its numbers. Even under favorable circumstances, each pair of condors will raise but one offspring a year. Oftentimes a pair of condors are very irregular in nesting. One collector states that in a certain locality where a pair of the birds live, they have nested but three times in about twelve years. Under these conditions it is not surprising that the condor numbers are decreasing, and unless the needed protection is given, this bird will undoubtedly follow the Great Auk.

If one were to begin collecting data on the California Condor, he would soon discover how little is really known. For a number of years, Mr. W. Lee Chambers has been collecting records to ascertain the exact number of the eggs of this bird that are in existence. These records reach up to the year 1906. At that time there were only forty-one eggs of this condor in the various museums and private collections of the world, while there are over seventy eggs of the Great Auk. There were about half a dozen of the birds in captivity. Of the eggs, twenty-six are first

class and fifteen second class. A number of eggs may have been taken in the early days, but very few of these are in existence at the present time. An egg in the possession of J. H. Gurney, England, was taken in April, 1859. As far as the records show, there were four taken about the year 1870, one in 1889, three in 1895, two in 1897, three in 1898, one in 1899, eight in 1900, three in 1901, six in 1902, one in 1903, and three in 1905.

The best early historical account of the California condor was published in Hutchings' California Magazine in the June, July and August numbers of 1859. It was written by Mr. Alexander S. Taylor. Altho the



CONDOR JUST DROPPING OFF HER PERCH IN FLIGHT;
TAKEN AT I-1200 PART OF A SECOND EXPOSURE

bird had been known to the scientific world since mentioned by Shaw in 1779, yet neither the bird nor the egg had been properly described, except from hearsay. Both Douglas in 1827, and Townsend in 1837, as related in Audubon, failed to discover the nest or ever got to see the eggs. Douglas assumed and stated dogmatically that the color of the egg was "jet black", which information was secured from the Indians.

It is interesting to note that the egg taken at this time, from which Mr. Taylor secured his description, is still in existence. This is very likely the oldest egg of the California condor, and is now in the collection of J. H. Gurney in England. The egg was secured from a hunter who took it the last week in April, 1859. Mr. Taylor recounts that the egg was laid in the hollow of a tall oak tree near the summit of one of the highest peaks in the vicinity of Tularcitos, near a place called Cunejos. This is the only record we have of the condor ever nesting

in a tree, and altho this record has been repeated in many books on ornithology, it cannot be regarded as completely authentic. It may safely be said that the nesting site of the California condor is always a pot-hole in the side of a cliff, a cave, or a recess in behind a large rock on the steep mountain side. There is no effort at nest building, but the single egg is laid on the bare ground.

The egg which Mr. Taylor secured weighed ten and a half ounces and the contents weighed eight and three-quarter ounces. A specimen that was killed on the beach at Monterey at this time was carefully measured by Mr. Taylor. It weighed twenty pounds; from beak to the end of tail feathers it measured four feet and a half; from tip to tip of wing it measured eight feet, four inches; one wing, three feet three inches; tail feathers, twelve in number, fifteen inches long.

As to the size of a full grown California condor, Mr. Frank Stephens says: "I believe that a bird that measures full ten feet, laid on its back on the floor and marked at wing tips without really stretching the bird, is an exceptionally large



PAIR OF ADULT CONDORS ON A FAVORITE PERCH

bird." Mr. Stephens gives the measurements and weights of six different condors as follows: the first three killed at Julian, the fourth at Ballena, and the other two at Santa Ysabel, California.

1. March 13, 1888; length 44.1 inches; spread 102.4 inches (1120x2600mm.); female, not quite mature; weight 16 pounds.

2. May 11, 1888; length 45.7; spread 112.2 (1160x2850 mm.); adult male; weight 19 pounds, eviscerated.

3. June 2, 1888; length 43.1; spread 110.7 (1095x2795); weight 21 pounds.

4. June 25, 1888; length 44.3; spread 110; adult male; weight 20 pounds.

5. May 10, 1899; length 44; spread 112; female, not quite mature.

6. May 24, 1899; length 45; spread 112 (1140x2845 mm.); adult male.

Mr. Arthur Wilcox says, "The average weight of the California vulture is twenty pounds, twenty-six being the maximum. The spread of wings is nine feet,

eleven feet four inches being the largest I have collected. This was secured on the Loma Pelon Mountains in Santa Barbara County."

In some of our works on ornithology, the authors seem to think that the California condor lays two eggs, altho there is no authority for such a statement, except by analogy with the turkey-buzzard.

One collector states, "I know positively of three instances where they laid but one egg and no instance where they laid more than one. I have talked with other men that know and they say they lay only one egg at a setting, which I am satisfied is right." Another collector gives these facts, "A condor never lays a second egg in the same season. I have taken eight of them, and never more than one in a nest. Most people think that the bird lays two eggs. I have investigated several such stories and always found them to be buzzards' nests."

Major Bendire gives credence to an old wood-chopper who says he saw a condor's nest which was a huge affair, about seventy-five feet from the ground, on the first limb of a redwood tree. The place was near his camp where he had excellent chances of observation. He said that there were two young, and they were nearly three weeks learning to fly. To any one who has studied condor habits, this story discredits itself.

Fourteen different eggs of the California condor show the following measurements in inches: 2.48x4.08, 2.53x4.28, 2.55x4.39, 2.58x4.57, 2.59x4.52, 2.60x4.30, 2.62x4.38, 2.62x4.44, 2.62x4.52, 2.65x4.40, 2.68x4.28, 2.68x4.50, 2.70x4.50, and 2.73x4.22.

The size and strength of the condor have often been exaggerated. There have been many absurd stories about these birds killing sheep and other animals. A short time ago I saw an account in a daily paper of where a hunter claimed he saw a condor sailing away with a hind quarter of venison in its talons. Mr. Alexander Taylor makes the statement that this vulture has been known to kill and carry off a hare in its claws. It is extremely doubtful that one of these birds would ever attack a living animal. The habit of this vulture is to wait till after death. As to the condor's carrying its prey, this is easily discredited by a study of the condor foot. The claws are blunt and weak, and the foot is not adapted for grasping or carrying as an ordinary bird of prey.

In regard to the range of the California condor, it is sure to be somewhat vague as long as we have wide stretches of rough mountainous regions in the West where little or no study has been given.

Beginning at the south, Mr. Nelson and Mr. Anthony both record the bird in Lower California. Mr. Anthony states, "I found the bird more or less common along the extension of the San Bernardino Mountains, that are known in Lower California as the Lagoon Range. I often saw as many as three at a time, but never shot any. I have not found its nest, nor could the natives of that section give me any information. Some told me that it nested in the crags on the east side of San Pedro, which may very likely be true, but I doubt any one's being able to prove it. The Indians and Mexicans use the large quills from the wings to carry gold dust, and seldom allow a condor to escape."

Altho we have plenty of records of the condor in Lower California, we have none directly across the Gulf in Mexico proper. Mr. Ridgway states, "I do not know of any Mexican or Central American record of the California vulture. There are several from Lower California, but none from Mexico proper."

Among the earlier records, the bird was reported in Arizona, and it was said it had been seen as far east as Utah, but this last was rather vague.

Mr. Herbert Brown who was stationed at Fort Yuma for some time, and has

traveled extensively thru Arizona, says, "I regret that I cannot give you any information on the California condor."

Mr. George F. Breninger wrote, "I know of no instance of the California condor in Arizona."

Mr. O. W. Howard who spent many years in the Huachuca and Chiricahua Mountains of southern Arizona, both of which ranges extend into Mexico, has seen no California condors or found any trace of them.

This seems to settle fairly well the southern limits of the condor's range. We find a few scattered in the San Jacinto Range, which is a small range about forty or



ADULT CALIFORNIA CONDOR ON MOUNTAIN SIDE NEAR ITS NEST

fifty miles from the coast extending thru Riverside and San Diego Counties. A few have been noted in the lower end of the San Bernardino Range during recent years. Where the San Gabriel Mountains cut thru Los Angeles County, condors are a little more numerous, and from this district thruout the mountainous regions of Los Angeles, Ventura, Santa Barbara, San Luis Obispo, and Monterey Counties, the largest number of these birds are found, but they are nowhere common.

There have been a few straggling records of the condor north of Monterey County in California, but none of recent date.

Dr. J. K. Townsend informed Audubon that "The California vulture inhabits the region of the Columbia River to a distance of five hundred miles from its mouth and is most abundant in spring, at which season it feeds on the dead salmon that are thrown upon the shores in great numbers. It is also met with near the Indian villages, being attracted by the offal of the fish thrown around their habitations." He also stated: "The California vultures cannot be called, however, a plentiful species, as even in the situations mentioned, it is rare to see more than two or three at a time, and these so shy as not to allow an approach to within a hundred yards, unless by stratagem. Although I have frequently seen this bird, I have never heard it utter a sound. The eggs I have never seen, nor have I had any account of them, that I could depend upon. I have never heard of their attacking living animals. Their food while on the Columbia is fish almost exclusively, as this food is always found in great abundance near the falls and rapids—they also feed on dead animals. At Fort Vancouver I saw two feeding on the carcass of a pig." Altho Townsend's statement is convincing, some people have doubted the authenticity of this record, since no one has since recorded the California condor in the region of the Columbia River. Dr. Newberry, Dr. Suckley, and Dr. Cooper could find no other records of the bird in Oregon.

The most striking record on the present range of the California condor is one from Douglass County in southern Oregon. This seems very unusual, as we can find nothing else in recent years of the bird living between the San Francisco region and this place, altho it is a stretch of several hundred miles.

The Oregon records were given by Mr. George Peck and his son Mr. Henry Peck, who are both reliable ornithologists, and who were both well acquainted with the bird in southern California. Mr. Henry Peck informs me that on or about July 4, 1903, he and his father saw two California condors at Drain, Douglass County, Oregon. They were quite high in the air and were sailing about over the mountains. The elder Mr. Peck saw them several times after that. He states the birds were instantly recognized by both of them. Again in March, 1904, Mr. Henry Peck writes, "I saw four condors which were very close to me, almost within gun shot. I recognized them first by their size, and second by the white feathers under their wings. The birds were all flying very low, as there was a high wind blowing." Mr. Peck also gives the record of a condor that was killed on the coast of southern Oregon a number of years ago.

These records seem to show that if the California condor was formerly found in the region of the Columbia river, the numbers have decreased and the last of these northern birds seem to have taken refuge in the rough mountain regions of southern Oregon, while the range of the condor in California has contracted to regions from Monterey County south thru the mountains of the Coast Range and the extension of the San Bernardino Range into Lower California.

Portland, Oregon.

THE LOCUST-DESTROYING BIRDS OF THE TRANSVAAL ^a

By DR. FREDERICK W. D'EVELYN

THE relation of birds to agriculture is one of much importance and is worthy of the closest investigation as well as the fullest consideration in order to arrive at results which constitute a safe experience for practical application. The advance of civilization of necessity interferes with the natural order of things,

^a Paper read before the Cooper Ornithological Club of California, September 21, 1907.

disturbing the balance which nature at all times, in her own many varied methods, ever is desirous of maintaining.

Every agriculturist ought to be, in measure at least, also an ornithologist—a bird man, capable of intelligent observation, capable of estimating the results of such observations and thereby arrive at conclusions which would prove helpful in estimating the proper balance to be aimed at, the proper relation to be desired, say, between species and numbers, between natural and artificial food supply and such like factors of compensation.

Among the serious pests to the farmer in all parts of the world insects occupy a place of almost primary importance. I well remember the second day I was in South Africa. I strolled out into the bush; the day was warm and the verdure and softness of the turf suggested a most pleasant resting place. Scarcely had I lain down than I was covered with myriads of creeping things. Insects of all possible shapes and colors ran over my outstretched body. They were all strangers to me and not knowing their intentions toward me, a foreigner, I was not long in deciding that until we were better acquainted I would refrain from taking mine ease upon the "soft and silent turf." The climatic and physical conditions of such an immense area of land as the Transvaal of course modify in a very perceptible manner its avifauna; thus, long stretches of park-like lands, rich in bush and verdure; then perhaps great areas devoid of all save scrubby grasses but ultimately terminating, not infrequently, in river banks, dense in shrubbery and tall reeds. Such variation of necessity finds its counterpart in a varied bird life which, especially to a stranger, presented an almost irresistible fascination. Indeed not infrequently one was prone to overlook one's outpost duty and revel in the attractive and novel seduction of the brilliantly plumaged birds flitting to and fro, scarcely disturbed by the white intruder, who to them must have been in very truth a *rara avis*. With such memories as these it seems almost a misfortune to learn that civilization has stepped in, and on the old fighting grounds is found the uniformed inspector, the museum expert, or other representative of a Bureau of Entomology or a Department of Agriculture. Do not these investigators only too surely indicate that man's intrusion has upset nature's compensatory balances, and the harmony of supply and demand being broken, artificial aid must come to succor the friend or destroy the enemy of the farmer and orchardist?

We have today quite a corps of field experts doing service in the Transvaal and who by the reports forwarded to headquarters are not merely affording valuable assistance to the agriculturist but adding much important knowledge which is most helpful to the ornithologist.

Among the insect pests up-country in Transvaal, Orange River country and other regions none demand more serious consideration than the locust. The Red Locust and the Brown, both migratory in habits, are guilty of much injury to crops, ripened grain and even to the pasturage on the veldt. The mature insect, owing to its great powers of flight, is more injurious, but the insect in an earlier stage known to the Boers as "Voetganger" is capable of much destruction. Almost all of the local birds, even hard-bills, eat locusts, while some are such free feeders upon the insects that they have been classed as Locust Birds. Our esteemed colleague, F. Thomsen, Assistant Chief Locust Officer, in his last official report to the Department of Agriculture, gives some interesting notes, the result of his observations in the field; these conjoined with such facts as have been personally recorded will enable us to learn something regarding these feathered friends of the farmers of the Transvaal.

The locust is a powerful insect on the wing and to encounter a swarm in mo-

tion is an experience not much dissimilar to that of a hailstorm, the insects actually striking one's face with a violence almost painful. It is a fact of common observation that birds carefully avoid becoming entangled in a swarm of locusts, attacking the moving mass only from the rear and then only effectually when the swarm is small or gets subdivided. The insect itself soon seems to realize that it is being hunted and seeks to take cover either by dropping suddenly into the long grass or, as in the case of Voetgangers, creeping beneath clods of earth, stones or such cover.

It is very interesting to see a covey of birds following the line of fire, as the grass, fired by the natives to increase its growth, wends its way like a huge serpent across the veldt and kopjes. The heat naturally drives the insects from cover, and they become easy prey to the birds. The Glareola (Nordmann's Prantincole) or as the farmers call it, the small locust bird, is par excellence the leading species in the destruction of the locust. This bird is somewhat larger than a cowbird or oriole: back greyish shading away into the belly which is nearly white; the throat is brownish mottled and separated from the chest by a collar of dark brown or grey. The play of color observable when the bird is flying is owing to the fact that the upper surface of the wings is greyish or black while the underside is light or almost white.

The birds appear in large flocks about this season of the year, which you will remember is the South African spring time, and, as Mr. Thomsen reports, display a most marked method of attack. Thomsen says: "The birds get on the wing as if by word of command and fly and whirl round and round rising higher and higher till the swarm looks like an immense dust-cloud rushing skywards." Once a swarm of locusts is sighted they break away from their formation, follow up the insects and, flying in amongst them, greedily seize the body, while the wings and legs, being neglected, fall in countless numbers upon the ground. The attack is kept up with great determination until either the swarm is destroyed or its broken sections seek cover in the long grass or rocky soil.

The Glareola are birds of ancient history, being figured in the hieroglyphs of Egypt, and it is not unlikely that the children of Israel had fricassed "Locust Birds" when the Transvaal was an inland sea and the great divide of the Drachensberg formed the barrier line of the Indian Ocean.

Storks, the White-bellied (*Abdimia abdimii*) and the European (*Ciconia alba*) are both locust eaters of repute. I have seen these birds in abundance in the Rustenberg district, a most charming region, well watered and abounding in park-like glades and rich pasturage. In the spring when the young grass is rich in verdure the big bird with its white plumage, black wings, scarlet beak and red legs, becomes a very conspicuous sight and proves a subject of much interest as it rushes hither and thither after the nimble Voetganger or the more adult Springhaan, as the Boer names the fully winged locust. The White-bellied Stork is possibly more numerous than his above-named relative and a large flock seen at a distance is not infrequently taken for a herd of sheep.

Once when passing thru the Marico district a bird was pointed out to us as one of the locust birds. I am satisfied since reading Mr. Thomsen's report that it was one of the starlings, probably the Wattled Starling (*Dilophus carunculatus*). At this interval it is difficult to recall its description but that of Thomsen is very distinct. This bird, like the Glareola, is about the size of a cowbird, greyish brown all over; the wings and tail very dark with a greenish sheen upon them. The underpart of the abdomen and undertail coverts are a very pale greyish brown; around the eyes there is a bright yellow patch; on the throat of the males are two

black wattles from which the bird takes its name. There is also another wattle on the top of the head and one on the forehead close to the upper mandible.

Their presence always indicates locusts and if the supply is abundant the starlings will locate, build, and hatch their young. Unfortunately, however, it not infrequently happens that the supply of locusts runs short ere the nestlings are fledged, with the result that numbers die from lack of food.

The South African Kestrel (*Tinnunculus rupicolus*) is a persistent enemy and will follow a swarm of locusts for miles, strangely avoiding the main body of the insects, seizing only the stragglers or tail-enders. These hawks of course catch the insect with their claws and dine in mid air while still upon the wing. It is reported by some of the earlier ornithologists that these hawks came from northern Africa, following the flights of locusts as they move southward, and being satisfied with their new quarters, took up their residence and became local varieties.

The Guinea Fowl (*Numida coronata*), so familiar in the bushes on the river banks, has not infrequently added a pleasant side dish to our scoff when on the up-country trek, we outpanned for the night, and, outstretched upon the grass, watched with impatient eyes our Kaffir boys prepare the evening meal. These birds, along with the legendary *Otis kori*, the Paauw of the Boers, the Crested Bustard of the ornithologist, a big bird of 30 or 40 pounds weight, but capable of outrunning, like our own famous *Geococcyx californianus*, a fleet horse; the Quail (*Coturnix capensis*); the cape turtle dove (*Turtur capicola*); the Hadadah Ibis, and many others must all be credited as aids to the agriculturist, so persistent are they in the destruction of locusts.

It would be an oversight even in this imperfect capitulation to omit reference to some of the "Tick Birds"—selecting by courtesy the graceful and not uncommon White Egret or Tick Bird (*Bubulcus lucidus*), a foe to the Voetganger, but not very effective inasmuch as they are dainty feeders, taking the precaution to "masticate" their prey before they swallow it, a slow process with the locusts in active flight.

They are a very showy bird and when seen in the early dawn seem almost spirit-like as they glide past on their way to the feeding grounds. The red-billed Oxpecker, a Tick Bird, but perchance only by renown, an emergency enemy of the locust, is such an interesting species that it is certainly worthy of mention. It is a bird somewhat larger than an English sparrow, multi-colored in plumage, with a very pronounced undershading of rich gamboge tint. It is amusing to watch it as it hunts for its food, the ticks upon oxen, horses and mules. Scarcely have you outspanned than the red-bill is alight upon the animals' backs; off it goes on its tour of inspection, clambering over, around, underneath; examining all flexures of the joints, around the eyes, the insertion of the tail, and such areas where the tender skin proves a favorite locality for the tick. Oftentimes have I been amused to see the little benefactor, with its head turned sidewise, peering into the anal socket, while the grateful animal lifts up the tail, only too glad to be freed from the dozen or more ticks which are invariably to be found in that region.

The bird is very active, ever on the *qui vive*, and it is difficult to obtain a specimen, for if disturbed it darts from one animal to another with great rapidity, and one hesitates to shoot an ox simply to obtain a specimen of *Buphaga erythrorhyncha*.

One day just when the setting sun was gilding the long stretches of vlei, across which we were driving, a large bird sprang out of the grass and ran rapidly ahead of us. Altho I had never seen one before, the pen behind its ear, its peculiar gait with tucked up hinder extremities, as if to keep it out of the wet, told me it

was a specimen of the famed Secretary Bird (*Serpentarius secretarius*). Its plumage was varying shades of neutral tints, evidently protective coloring harmonizing with its surroundings; in length 51 inches with an expansion of 74 inches. The bird is strong on legs and wing, generally running a considerable distance before taking flight. It builds a gigantic nest, perhaps even larger than that of the King of Kopje, the Black Vulture (*Otogyys auricularis*). The nest is loosely put together, of coarse twigs, and not infrequently placed in the deep center of one of those thorn trees whose formidable spines have won an unenviable notoriety for the species in South Africa.

The Secretary, known to the Boers as the snake-eater, makes a meal of lizards, rats, meercats, locusts, or snakes, just as the menu provides. In his encounter with the latter he is seen at his best. No sooner does his keen eye locate a snake than he advances toward it, carefully but surely. When within striking distance the ear tufts and neck feathers are erected, the bird strikes out with its foot, somewhat after the manner of a game rooster, at the same time lowering a wing which it interposes as a shield to receive the stroke of the snake. The fight is generally one of but a few rounds, for the bird is an able fencer and succeeds very quickly in getting in a single blow which breaks the back of the snake. The bird immediately follows its advantage by implanting its foot upon the head and neck of the reptile, pressing them into the ground, while it delivers the *coup de grace* with its powerful beak. It then deliberately swallows the snake whole, beginning with the tail, and, as if to make death doubly certain, it bangs the head once again against the ground just as it disappears within the accommodating maw of the victor. This bird is so valuable as a scavenger that it is now upon the protected list.

One might linger longer and recount memories of the great vultures, those mighty factors in South African sanitation, or repeat legends of the White-necked Raven, associated in the hazy orthodoxy of the voretrekkers as the species which fed the exiled prophets, or might perchance hear again, as we have so often done, the weird affrighted cry of the Plover which threaten to reveal our presence as we carry despatches or steal ghost-like amidst the midnight shadows to outflank the watchful Zulu or cunning Matabele. But time forbids.

In conclusion let us only earnestly hope that future campaigns in South Africa may be those of the ornithologist and scientist, marching thrice-armed in the justness of their cause against an only too numerous and capable enemy, the insect pests, whose advance at times is as terrible and as destructive as an army with banners.

Alameda, California.

NESTING OF THE WESTERN HORNED OWL IN COLORADO

By ROBERT B. ROCKWELL

YEAR after year, as the first faint signs of approaching spring begin to manifest themselves and the familiar longing for the fields and woods asserts itself the writer's first thought has been of that much-sought-for nest of the Western Horned Owl (*Bubo virginianus pallescens*). But despite repeated inquiries, numerous "false alarms" and long hard trips during many different years it was not until the spring of 1907 that the long-looked-for nest was discovered.

Repeated failure had created a rather vague impression that a Horned Owl's

nest was some sort of a myth or that a charm of some kind protected it from discovery, and it was with a decided lack of confidence that the search was renewed for another year, early on the morning of March 10, 1907.

A brisk ride of ten miles brought us to our field of operations: a typical prairie creek with a wide sandy bed, over which very little water was flowing, and bordered on either side by low bluffs and occasional groves of cottonwoods and scrub willows.

Practically the only signs of spring discernible were a few scattered Robins, new arrivals from their winter homes, an occasional blade of green grass and a flock of noisy Red-winged Blackbirds at the very top of a tall naked cottonwood, each apparently trying his best to outdo the melodious "kong-ker-ee" of the rest.

After following the course of the creek about a mile we came to a grove which filled every requirement for an ideal nesting site of our friend *Bubo*. The grove lay between the creek bed and an abrupt bluff protecting it from the north, and at the foot of which lay a slough overgrown with tules, cattails and rank grass, now dead, dry and yellow but furnishing excellent cover for a variety of small bird life. The timber was very dense in places and more open in others, affording a welcome retreat for almost any type of bird and thus an abundance of food for any predatory birds hunting in the grove.

We had almost completed a thoro search of the grove without results when out flopped a big owl from a dense scrub willow tree within a few feet of us. A close scrutiny of the tree failed to reveal a nest, so a systematic search of the grove was begun. As no dead trees of any size were seen we concluded that the nest must be in one of the old magpie's nests which abounded all thru the grove. So arming ourselves with sticks we began an animated bombardment of each nest. After considerable hard work and as we were nearing the outer edge of the grove a nest was encountered which was so small and dilapidated in appearance that it hardly seemed worth while to throw at it, but as the second stick thrown crashed heavily against the nest Mrs. *Bubo* rose clumsily from the nest and launching herself slowly into the air silently flapped out of sight.

Just how long it took the writer to climb that tree is not part of the story but it was pretty close to 0:00 flat, and as his head came to a level with the nest there



WESTERN HORNED OWL ON NEST

lay one great, round, pearly white egg in a downy bed of fluffy yellowish feathers.

The nest was a badly dilapidated magpie's nest from which all of the top had weathered away except a portion which shielded the bird from the north, leaving a rather flat platform of sticks not unlike an old hawk's nest, and was situated about 15 feet from the ground in a small cottonwood tree about 8 inches in diameter. The depression of the nest cavity was quite shallow and was unlined except for a thin layer of feathers from the parent's breast, upon which, together with some dead leaves and similar trash the egg was deposited.

After taking a few preliminary notes we left the nesting site as quietly as possible in order not to disturb the birds any more than was necessary. A week later we returned and carefully approached the nest. The owl evidently heard us and as she raised up we could plainly see her head above the rim of the nest.



NEST AND EGGS OF THE WESTERN HORNED OWL

We promptly got our cameras into action and after making a couple of exposures from the ground, climbed a tree about 25 feet from the nest in order to get a better view of the brooding female. This did not seem to frighten her, but when we got about half way up a tree within 15 feet of the nest the old bird flopped off the nest and out of sight.

An examination of the nest revealed two eggs in which incubation had begun. The nest contained many more feathers than on the previous week and as a breeze was blowing these nodding feathers gave the interior of the nest a beautifully soft downy appearance. By climbing an adjacent tree and lashing the camera to a limb we secured a close view of the nest and eggs, and then by careful work, after winding the nest securely, we cut down the tree and, loading it into the wagon nest and all, carried it in triumph to the Colorado Museum of Natural History

where it will no doubt form part of an environmental group at no greatly distant date.

During all the time we were photographing and removing the nest we did not catch sight of either of the parent birds, in fact we did not see the male bird at all on our second trip to the nest.

Spurred on by our success we made a trip to another spot fully ten miles from where the nest was found, where Horned Owls had been reported; but altho both birds were flushed, an exhaustive search on this and a later day failed to reveal a nest. These birds while living in this particular locality thruout the year were apparently not nesting.

From the above statements it might be inferred that the Western Horned Owl is a rare bird in Colorado. Such however is hardly the case; in fact, in certain isolated localities it is reasonable to assume that it is fairly common. It is true that the omnipresent "small boy with a gun" has practically exterminated the species in the immediate vicinity of Denver, but along many of the creeks on the plains east of Denver which afford sufficient food and cover the Horned Owls are of regular and rather frequent occurrence. Thruout the mountainous western portion of the state the birds occur regularly but I have never seen them in any numbers. Whether this is due to lack of observation or to an abundance of cover and a real scarcity in numbers I am unable to state. At any rate I do not think the birds are as common anywhere in the state as they are along the well wooded prairie streams.

As is the case with the typical form of the Horned Owl, the western form chooses various nesting sites. Cavities in large trees and in sandstone ledges, deserted hawk's nests and even nests on the ground have been reported, but probably owing to their great abundance and the natural advantages they offer, deserted nests of the magpie are more commonly resorted to than any other site.

The very early date at which nidification takes place and the quiet and inconspicuous habits of the birds during the nesting season probably accounts for the scarcity of eggs of this subspecies in collections, and these reasons are also probably responsible for the way in which these birds withstand constant persecution, not only from hunters but from ranchmen as well, for every farmer seems to feel it a solemn duty to do his share toward exterminating the entire owl family.

It has been said and possibly it is true that the Horned Owl is the most destructive of North American birds, but even if this be true, it is certainly a fact that what damage the comparatively few individuals of the species, to be found in any given locality, really do is not sufficient to brand them as a natural menace, and the amount of good they do in destroying small rodents should certainly be a strong point in their favor.

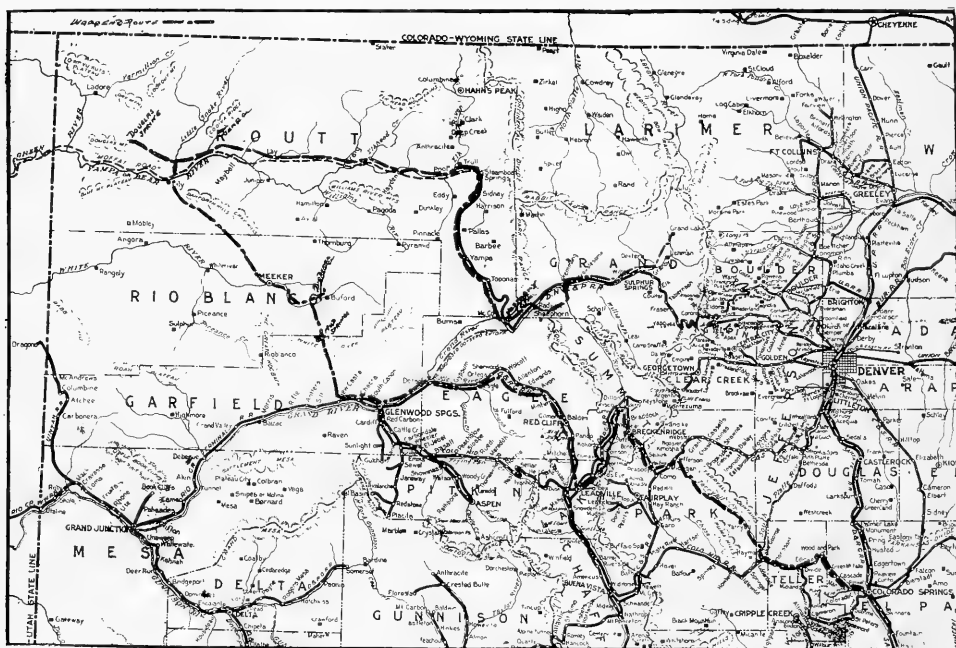
But when all other arguments for a sweeping bird protection fail to convince, we can always fall back on the fundamental fact that Nature knows how to conduct her affairs very well and if those who are over-anxious to exterminate any creature regarding whose economic usefulness there is a question would rest from their labors of carnage and let the natural laws take their course, the ultimate results would probably be fully as satisfactory. The natural order of things was normal when we came and will be normal after we are gone. Why not let a wise Nature of which man is but an insignificant part rule without our interference?

Denver, Colorado.

NORTHWESTERN COLORADO BIRD NOTES

By EDWARD R. WARREN

THE last of March, 1907, the writer went to Sulphur Springs, Grand County, Colorado, for the purpose of collecting, mammals being, as usual, my specialty. I remained there until May 7, collecting in that vicinity; and on that date, with Mr. J. W. Frey as assistant, I started on a week's trip to Grand Lake, 28 miles from Sulphur Springs, and farther back in the mountains. We returned to Sulphur Springs, and on the 16th of May Frey and myself started out on the route shown on the accompanying map. We had a covered wagon and pair of horses, and camp outfit, so that we were pretty independent. Altogether we drove about 650 miles, exclusive of the Grand Lake trip, and thru all sorts of country,



NORTHWESTERN CORNER OF COLORADO, SHOWING ROUTE TRAVERSED BY E. R. WARREN

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and were at various elevations, from 5374 feet at Newcastle, to 12,000 feet and over near our Boreas Pass camp on the Continental Divide.

As would be expected over such a route, there was great difference in the physical and biological characters in different portions. Sulphur Springs has an elevation of 7,665 feet, situated in the Middle Park, a rolling well-watered tract just at the west edge of the foothills of the Continental Divide. Some of the hills are quite well timbered, especially on the north slopes, tho the trees are not large. They are mostly pines; quaking aspens are also common. There is much sage-brush in the open country. Grand Lake is more in the mountains, at an elevation of 8,300 feet. The lake is two or three miles long, and a mile or more wide, with thickly timbered hills coming down to its very edge all about. There is a small town here, and it is quite a summer resort in a small way.

Going west from Sulphur Springs our route kept us mostly at the higher alti-

tudes as far as collecting was concerned, until we got to Yarmany Creek, near McCoy, in the cedar and pinyon belt, at 6,800 feet. Thence we crossed into Egeria Park, and went on to Yampa, 7,700 feet. From here on, as long as we followed the Bear River Valley, we gradually reached lower elevations, until at Snake River, seven miles above its confluence with the Bear, we were at 5,850 feet, in a dry desert country with sage brush and chico in abundance. From here we went to Douglas Spring, fifteen miles farther, and in the cedars and pinyons again at 6,700 feet. We went there especially for the Utah Chipmunk (*Eutamias dorsalis utahensis*), which comes into this portion of the state only. The Colorado range of three other species of small mammals, namely, *Eutamias minimus*, *Callospermophilus wortmani*, and *Neotoma cinnamomea*, is restricted, so far as at present known, to this northwest corner. These are all pale, arid land forms.

From Douglas Spring we back-tracked to the Snake, and then went down it to the Bear River, at Lily P. O., at Mr. F. C. Barnes' ranch, where we camped twenty-four hours, and then ferried the outfit across the Bear in rowboats: rather a strenuous undertaking, as the wagon had to be unloaded, body and top lifted off, wheels taken off, and the whole thing torn apart generally, and then everything put together again on the other side; but all was taken across safely, and the horses made to swim, which they did in good shape. Later in the season we could have forded, but were in too great a hurry to wait for the river to run down. We camped that night among the willows and mosquitos, especially mosquitos.

It was a dry drive from Lily to Meeker, 60 miles, only two or three watering places along the road until we got close to the latter place. From Meeker on we usually had plenty of water, sometimes too much, when it rained. The valleys of the White, Grand and lower Eagle Rivers are quite similar and, what one usually finds in western Colorado, fertile lands, but where not cultivated and irrigated covered with much sagebrush, hills sloping down on either side, with aspens on the lower slopes, and pines or spruces above.

For certain reasons I wished to go by way of Breckenridge, and hoped to cross from Red Cliff to Ten Mile Creek, and then it was but a little way to Breckenridge. But we found by inquiry that this road, if not impassable, would be at best a pretty tough proposition. So, instead of taking that route, we drove over Tennessee Pass to Leadville, then turned back and crossed Fremont Pass to the Pacific Slope again, thence down the Ten Mile and up the Blue to Breckenridge. And then we crossed the Continental Divide once more at Boreas Pass. The airline distance between Tennessee and Boreas Passes is only about 18 miles; but we traveled several times that between them. From Boreas it was down thru the South Park country, and over the Hayden Divide, and then thru the Ute Pass to Colorado Springs and home, on August 12. The life zones traversed covered everything from the Upper Sonoran to the Alpine.

During all this time I devoted myself practically exclusively to mammals, and birds were but a side issue, not many being collected. If we had looked more for birds I have no doubt but that this list would be much longer. The early part of the season was cold and stormy; it was not until the end of the first week in June that we had really good settled weather. The migrations seemed late, tho my notes on that subject are not of much value; traveling as we did from the higher to the lower altitudes during the migrating season, we were moving in a contrary direction to the migrants, and usually stopping for only a few days at each place, but little could be told as to the birds' movements.

I wish to acknowledge here my appreciation of Mr. Frey's services. Tho his special duties were to look after the team and camp outfit, and to see that we had

something to eat with more or less regularity, he was far too energetic to let that be all, and taking as much interest in the object of the trip as I did myself, he really did as much collecting as I, and was of great assistance in preparing specimens. The following is a list of the birds observed:

1. *Colymbus nigricollis californicus*. Eared Grebe. Common at Grand Lake, May 10-12.

2. *Hydrochelidon nigra surinamensis*. Black Tern. Seen June 1, flying about over the meadows along Bear River, five miles above Steamboat Springs. A dozen or fifteen were seen.

3. *Merganser americanus*. American Merganser. A duck we supposed to be of this species was seen on Bear River, near Steamboat Springs, June 6 and 8.

4. *Fulica americana*. American Coot. One or two seen on Grand Lake, May 10.

5. *Phalaropus lobatus*. Northern Phalarope. June first I killed one on a little branch of Oak Creek, about 8 miles above Steamboat Springs. It seems rather a late date for the bird to be there as it does not breed in Colorado.

6. *Ardea candidissima*. Snowy Heron. One was seen on a bar in Grand River, near Kremmling, May 17.

7. *Porzana carolina*. Sora. One was caught in a trap set for muskrats, in a slough at Lay. At that date, June 17, it was no doubt breeding there.

8. *Actitis macularia*. Spotted Sandpiper. Seen practically everywhere we went that there were any streams or water. A nest and eggs were found at Lily, Routt County, June 30.

9. *Oxyechus vociferus*. Killdeer. The first one was seen May 12, on Stillwater Creek, between Sulphur Springs and Grand Lake. After that seen pretty much everywhere we went.

10. *Dendragapus obscurus*. Dusky Grouse. Seen at Sulphur Springs, and near our camp at Sheephorn Pass, in Grand County.

11. *Lagopus leucurus altipetens*. Southern White-tailed Ptarmigan. Only one was seen during the trip, while we were at Boreas Pass; in fact this was the only time we were in a locality inhabited by them.

12. *Centrocercus urophasianus*. Sage Grouse. Seen in the vicinity of Sulphur Springs during my stay there. June 14 we saw a hen with three chicks about two weeks old, about 8 miles west of Craig. The next day, at Lay, we saw another hen and three young, the latter being much larger than those seen the previous day. July 5, I saw well grown young near Meeker. The bird is quite numerous in some localities.

13. *Zenaidura carolinensis*. Mourning Dove. First seen May 12, at Stillwater Creek, between Grand Lake and Sulphur Springs. After that seen everywhere. Nests and eggs found at Craig, June 12-13, and one nest and eggs near Douglas Spring, June 27.

14. *Cathartes aura*. Turkey Buzzard. Seen near Craig, at Sand Creek, and Snake River, Routt County; and near Meeker.

15. *Circus hudsonius*. Marsh Hawk. Not as many seen as one would expect, and these were mostly at various places in Routt County. The only other locality was Mud Springs, Garfield County, on the White River Plateau.

16. *Buteo borealis calurus*. Western Red-tailed Hawk. Seen at Sulphur Springs March 29. After that they were seen more or less frequently everywhere we went.

17. *Aquila chrysaetos*. Golden Eagle. Seen at Yampa, Oak Creek, below Steamboat Springs, and on Snake River, all in Routt County; and one at White

Rock about 12 miles above Meeker. Probably fairly common thru most of the region traversed.

18. *Falco sparverius*. Sparrow Hawk. First seen at Sulphur Springs April 20, after that common everywhere.

19. *Bubo virginianus pallescens*. Western Horned Owl. One seen sixteen miles below Steamboat Springs, and two near Mud Springs.

20. *Speotyto cunicularia hypogæa*. Burrowing Owl. During the whole trip, and in spite of the fact that we passed thru numerous prairie dog towns, we saw but two burrowing owls, which were seen June 17, in a deserted dog town about halfway between Lay and Sand Creek, Routt County.

21. *Ceryle alcyon*. Belted Kingfisher. First seen at Sulphur Springs April 30; after that seen here and there along the Grand and Bear Rivers, and also on the Eagle River.

22. *Sphyrapicus varius nuchalis*. Red-naped Sapsucker. One taken at Grand Lake, May 10.

23. *Melanerpes erythrocephalus*. Red-headed Woodpecker. A male seen June 10, about five miles below Steamboat Springs.

24. *Melanerpes torquatus*. Lewis Woodpecker. Seen on Oak Creek, above Steamboat Springs; at several points between the latter place and Craig; and one at Green Mountain Falls, at the very end of the trip.

25. *Colaptes cafer collaris*. Red-shafted Flicker. First seen at Sulphur Springs, March 29, and were common by April 3. We saw them everywhere we went. I saw one near Boreas Pass at about 12,000 feet elevation.

26. *Phalænoptilus nuttallii*. Poorwill. Two were collected at Craig. Their notes were heard in the evening at various places along our route.

27. *Chordeiles virginianus henryi*. Western Nighthawk. Seen frequently from Steamboat Springs to the end of the trip.

28. *Selasphorus platycercus*. Broad-tailed Hummingbird. Three males of this species were taken, two near McCoy, and one at Steamboat Springs. Hummingbirds were frequently seen, but these were the only ones collected. At Steamboat Springs, June 8, we saw a female hummer at work building a nest, just begun and placed in small overhanging limbs of a cottonwood tree, close to the trunk.

29. *Tyrannus tyrannus*. Eastern Kingbird. Seen ten miles above Steamboat Springs, below Hayden, at Craig, and near Lay, all in Routt County.

30. *Tyrannus verticalis*. Western Kingbird. First seen May 16, between Sulphur Springs and Kremmling. After that date they were seen frequently during the whole trip. June 13, Frey found near Craig a nest with five well feathered young in a little cavity near the top of one of the low adobe bluffs along Fortification Creek. At Hiner and Jones' ranch, Big Beaver Creek, near Buford, Rio Blanco County, there was a nest with young only a few days old on the end of the ridgepole of the cabin we camped in. It is quite possible some of the birds seen may have been *T. vociferans*; as none were collected there was, of course, a chance for mistakes in identification, but I think there is little doubt that the great majority were *verticalis*.

31. *Myiarchus cinerascens*. Ash-throated Flycatcher. Several were seen at Douglas Spring; and one was seen near Dotsero, Garfield County.

32. *Sayornis saya*. Say Phoebe. First seen at Sulphur Springs April 25. It was seen here and there during the trip, but not as often as one would have expected.

33. *Contopus richardsonii*. Western Wood Pewee. Seen at Steamboat Springs, and between there and Craig.

34. *Otocoris alpestris leucolæma*. Desert Horned Lark. Seen at various places

during the trip, in the open country; also seen above timberline, near Boreas Pass, at 12,000 feet.

35. *Pica pica hudsonica*. Magpie. Seen about everywhere we went, except on Boreas Pass. At Oak Creek, Routt County, we found a nest with four young, apparently about eighteen days old.

36. *Cyanocitta stelleri diademata*. Long-crested Jay. This species was not seen as often as one would expect. It was seen at Grand Lake, and at various points between Sulphur Springs and Steamboat Springs, and not seen again until we were coming up Eagle River, below Tennessee Pass. From Leadville to Colorado Springs it was seen at many places except at the highest altitudes.

37. *Aphelocoma woodhouseii*. Woodhouse Jay. Observed at the following points: near McCoy; Snake River, above Lily; Douglas Spring; near Newcastle and Glenwood Springs; Eagle, and Allenton.

38. *Perisoreus canadensis capitalis*. Rocky Mountain Jay. Seen, of course, only at the higher elevations. One was seen at Sulphur Springs; several near Sheephorn Pass; at Mud Springs, July 13, where they were moulting; near Kokomo; and at Boreas Pass, August 2-5, still moulting.

39. *Corvus corax sinuatus*. American Raven. Noted at various places in Grand, Routt, and Rio Blanco Counties.

40. *Nucifraga columbiana*. Clarke Nutcracker. Seen at Sulphur Springs; near Sheephorn Pass; Breckenridge; Michigan Creek, below Jefferson; and at Florissant. It is a bird which seems to be rather local in its distribution in Colorado.

41. *Cyanocephalus cyanocephalus*. Pinyon Jay. Seen at a few places in or near the cedar and pinyon belts as follows: near McCoy; Snake River, a few miles above Lily; Douglas Spring; White River, below Big Beaver Creek; and 12 miles above Glenwood Springs, in the Grand River canyon.

42. *Dolichonyx oryzivorus*. Bobolink. As we were driving along one of the toughest roads I ever got onto, about five miles above Steamboat Springs, I saw several birds in the road and on the fences alongside which I did not at first recognize, then suddenly realized they were Bobolinks, a bird that I had not seen for many a year, as they are rare and local in Colorado. Here were ten or a dozen of them, both sexes, and a male was secured as evidence that I was not mistaken. This was June first; on the eighth we saw more in a meadow one and one-half or two miles below Steamboat Springs, and judging from their actions they had not yet finished mating. On the tenth we saw some in the Elk River Valley, about ten miles below Steamboat Springs. Mr. F. H. Hopkins, in *Auk*, Vol. 23, p. 461, 1906, reports them as breeding near Meeker, Rio Blanco County.

43. *Molothrus ater*. Cowbird. Seen at many places along our route, and practically from one end to the other.

44. *Xanthocephalus xanthocephalus*. Yellow-headed Blackbird. Seen only in a few places: between Sulphur Springs and Kremmling; a few miles above Steamboat Springs; 15 miles below Steamboat Springs; and near Gypsum a single male was seen with a flock of Cowbirds and Brewer Blackbirds.

45. *Agelaius phoeniceus*. Redwinged Blackbird. Noted frequently in suitable locations.

46. *Sturnella neglecta*. Western Meadowlark. Observed nearly everywhere, tho for some reason we did not notice any along the Grand and Eagle Rivers.

47. *Icterus bullocki*. Bullock Oriole. Seen only at Steamboat Springs and a few miles below that place. It seems strange that we did not see more of them, but that

is partly accounted for by the fact that at many places we were away from trees such as they like.

48. *Euphagus cyanocephalus*. Brewer Blackbird. I saw the first at Sulphur Springs May 1. After that they were seen everywhere we went and were usually very common. Nests and eggs were found at Steamboat Springs June 1 to 8.

49. *Carpodacus cassini*. Cassin Finch. Seen at Grand Lake; near Sheephorn Pass; at Douglas Spring; at Mud Springs; and at Boreas Pass.

50. *Leucosticte atrata*. Black Leucosticte. One was seen April 6 at Sulphur Springs in company with a large flock of Juncos. It was storming and snowing at the time.

51. *Leucosticte australis*. Brown-capped Leucosticte. Seen only at Boreas Pass, in early August.

52. *Acanthis linaria*. Redpoll. April 14, I saw four at Sulphur Springs.

53. *Astragalinus tristis*. Goldfinch. One or two seen with flocks of Pine Linnets several miles below Steamboat Springs, and also, if I remember correctly, near McCoy.

54. *Spinus pinus*. Pine Linnet. Observed usually in flocks, at various places from Sulphur Springs to Hayden; at Mud Springs; Allenton; Minturn; Breckenridge and Boreas Pass.

55. *Poœcetes gramineus confinis*. Western Vesper Sparrow. Seen first at Sulphur Springs April 26; after that they were seen everywhere, and were common.

56. *Passer domesticus*. English Sparrow. These nuisances were seen at the following places: Sulphur Springs (only a few); near McCoy; Yampa; Steamboat Springs; Hayden; Meeker; Glenwood Springs; Eagle; Wolcott; and Jefferson.

57. *Chondestes grammacus strigatus*. Western Lark Sparrow. Seen at only a few places: near the lower bridge over Snake River, and between there and Lily; near Wolcott; near Pando Station, on Eagle River, 9,200 feet; and near Florissant. This is another bird which should have been seen more frequently.

58. *Zonotrichia leucophrys*. White-crowned Sparrow. First one seen at Sulphur Springs May 2. Thence it was seen along the road until about 15 miles below Steamboat Springs. It was not seen again until we got up toward the head of Eagle River. At Boreas Pass many were seen among the dwarf spruces at timberline, 12,000 feet, and some acted as if they had nests or young about, tho I could find none. This was on August 4.

59. *Spizella socialis arizonæ*. Western Chipping Sparrow. Seen at many places between McCoy and the end of the trip.

60. *Spizella breweri*. Brewer Sparrow. First seen near Craig, and thence between that place and Meeker. An inhabitant of the sage brush plains, and fairly common where found.

61. *Junco hyemalis connectens*. Intermediate Junco. One seen March 30 at Sulphur Springs.

62. *Junco mearnsi*. Pink-sided Junco. Seen at Sulphur Springs at various times between April 2 and May 5.

63. *Junco caniceps*. Gray-headed Junco. At Sulphur Springs, on my arrival, this was by far the most common Junco. Besides Sulphur Springs it was also seen at Grand Lake; Sheephorn Pass; near summit of pass going down into Egeria Park; near Steamboat Springs; at Red Cliff; Breckenridge; Boreas Pass; Tarryall Creek; and Green Mountain Falls.

64. *Melospiza cinerea montana*. Mountain Song Sparrow. Noted at Sulphur Springs; near McCoy; Yampa; between Hayden and Craig; Eagle and Allenton.

65. *Pipilo maculatus megalonyx*. Spurred Towhee. Seen near lower bridge

over Snake River; near Douglas Spring; at Lily; and on Elk Creek, above Newcastle.

66. *Oreospiza chlorura*. Green-tailed Towhee. First seen May 11, near Grand Lake. Observed practically everywhere between Sulphur Springs and Craig, and then not noted again until we got to Douglas Spring. It was seen along the road between Lily and Meeker, and from there on at various points.

67. *Zamelodia melanocephala*. Black-headed Grosbeak. Seen on Oak Creek; at Steamboat Springs; Hayden; Lily and Allenton.

68. *Cyanospiza amœna*. Lazuli Bunting. Seen at Meeker; near Glenwood Springs, and twelve miles above the latter place.

69. *Calamospiza melanocorys*. Lark Bunting. Observed at Yampa and above Steamboat Springs; we were told of them near Craig, and our informant said they were the first he had ever seen there, and he had lived there nine years; at Lay on June 15-16 they were still mating, at least each of us at different times saw two males pursuing a female. They were seen at Sand Creek. After that no more were seen until we neared Florissant, when we saw a mixed flock, males, females and young.

70. *Piranga ludoviciana*. Western Tanager. Seen near McCoy; at Steamboat Springs; Douglas Springs; and below Minturn.

71. *Progne subis*. Purple Martin. Several were seen flying about at Mud Springs, on the White River Plateau, 8,850 feet, and also on the West Fork of Elk Creek, about eight miles above Newcastle. Messrs. Cross and Baker told me that the Martin was to be found about Glenwood Springs. The bird is very locally distributed in Colorado.

72. *Petrochelidon lunifrons*. Cliff Swallow. No Cliff Swallows were seen until we passed Craig, and thence we saw them here and there all along the road, often very abundantly. A large colony was nesting under the lower bridge over Snake River.

73. *Hirundo erythrogaster*. Barn Swallow. This species was seen at only a few places, viz: eight miles below Hayden; at Lay; and at Florissant. But it is no doubt much more abundant thru the territory traversed than this would seem to indicate.

74. *Tachycineta thalassina lepida*. Violet-green Swallow. First of the season seen at Grand Lake May 12. Thence more or less common everywhere we went.

75. *Lanius ludovicianus excubitorides*. White-rumped Shrike. For some reason we only saw this bird on two occasions, between Sulphur Springs and Grand Lake, May 11; and at Kremmling, May 16.

76. *Dendroica æstiva*. Yellow Warbler. First seen near Yampa, May 26. Thence it was seen nearly everywhere we went, and was quite common.

77. *Dendroica auduboni*. Audubon Warbler. Seen at comparatively few localities, but that was because much of our route was at a lower elevation than the birds' breeding range. It was seen at Sheephorn Pass; Yampa; Steamboat Springs and a few miles below; and at Douglas Spring.

78. *Icteria virens longicauda*. Long-tailed Chat. There were numbers about the thick willows on the south side of the Bear River at Lily, and they were also seen at Allenton.

79. *Anthus pensilvanicus*. American Pipit. Seen near Spitzer's about twelve miles above Sulphur Springs, May 13. In spite of the fact that there were several inches of new snow on the ground at the time, and still snowing, the birds were taking a bath in a little stream which the road crossed. The species was also seen at timber-line at Boreas Pass.

80. *Cinclus mexicanus*. Water Ouzel. Seen at a number of places along the streams at the higher elevations.

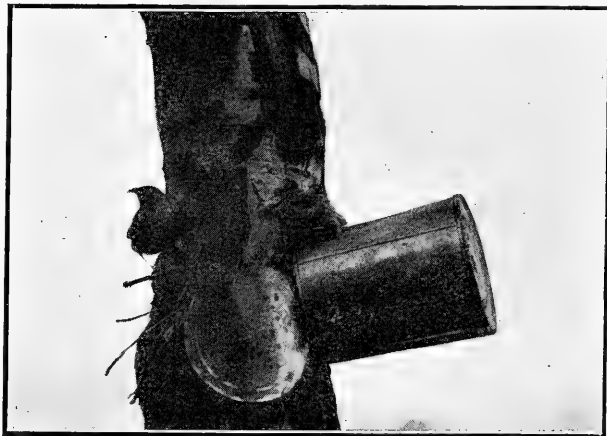
81. *Oroscoptes montanus*. Sage Thrasher. Seen at Yampa. They were common on the sagebrush plains about Lay, and thence to Douglas Spring, and from there to Meeker. Near the lower bridge over Snake River, on June 22, we found a nest with five eggs.

82. *Mimus polyglottos*. Mockingbird. Frey shot one May 23, at Yarmany Creek, near McCoy, altitude 6,800 feet. This seems to me rather an unusual record for the bird.

83. *Galeoscoptes carolinensis*. Catbird. Seen at lower bridge, on Snake River, and at Allenton.

84. *Salpinctes obsoletus*. Rock Wren. Seen at various places where the country was suited to its habits.

85. *Troglodytes aedon aztecus*. Western House Wren. The first one was seen May 18, near Sheephorn Pass, 8,200 feet. Seen at many places after that. At Steamboat Springs we had a most interesting experience with a pair. We stopped at that place from the first until the tenth of June. On the morning of the fourth I discovered a lot of twigs in the jockeybox of the wagon, which had been left open over night, and soon a wren appeared with another stick and added it to the collection. The wagon stood about parallel with and 12 feet from one side of the tent, and about midway between the front end of the wagon and the rear end of the tent was an aspen tree. We nailed an empty fruit can to the tree in such fashion that there was only a small entrance hole. Then threw the sticks out of the jockeybox, closed it, and awaited developments. The birds



HOUSE WREN ABOUT TO ENTER HER NEST

came back and investigated, and presently began to build in the can. They did not utilize any of the stuff we had thrown out, but brought new. Once they, or the female, threw everything out of the can, and began all over again. They worked daily until we left, but seemed to do most of their work early in the morning. I often heard the male singing at daylight, apparently right over the tent. When we left the can was full of sticks, but the birds were still working. As we were suspicious characters the town marshal had been a daily visitor at our camp, and on our departure we left the nest under his special charge, and he promised to "make it hot for any kid who monkeyed with it." I have never heard if they raised a family or not.

86. *Sitta carolinensis aculeata*. Slender-billed Nuthatch. Seen only at Douglas Spring, and on Tarryall Creek, but should be in other localities.

87. *Sitta pygmæa*. Pigmy Nuthatch. Seen at Sulphur Spring; near McCoy; at Douglas Spring; and near Florissant. Should be at other places we visited, but we did not happen to see them.

88. *Parus inornatus griseus*. Gray Titmouse. Frey saw a small flock at Douglas Spring.

89. *Parus gambeli*. Mountain Chickadee. Observed at Sulphur Springs; Grand Lake; near McCoy; at Douglas Spring; and on Tarryall Creek. As in the case of the nuthatches, they should have been seen elsewhere.

90. *Regulus calendula*. Ruby-crowned Kinglet. Seen only at Sulphur Springs.

91. *Myadestes townsendii*. Townsend Solitaire. Noted a number of times at Sulphur Springs and Grand Lake; near Kremmling and near Sheephorn Pass. After that we were out of their summer range, until we struck the Continental Divide, and did not happen to run across any then.

92. *Morua migratoria propinqua*. Western Robin. Robins were at Sulphur



SITE OF HOUSE WREN'S NEST—IN TIN CAN NAILED TO TREE AT LEFT

Springs on my arrival there; during the stormy weather in April they gathered at times in large flocks, 75 or more. They were noted everywhere along our route. At Steamboat Springs; June 1-10, we found nests with eggs and young. July 12 we found at Mud Springs a nest with four eggs.

93. *Sialia arctica*. Mountain Bluebird. The Bluebirds were at Sulphur Springs when I arrived. About the middle of April their actions indicated that if they were not already nesting they were seriously considering doing so. They were seen everywhere we went on the trip.

Colorado Springs, Colorado.

THE TAWNY CREEPER IN WESTERN WASHINGTON

By J. H. BOWLES

ALTHO resident thruout the year, the Tawny Creeper (*Certhia familiaris occidentalis*) is locally distributed and must be considered as rather rare even in the most favored sections. Its retiring, unobtrusive habits and weak, kinklet-like squeaking note tend to make it all the more elusive, even to the most experienced bird student.

After the nesting season is over it may be found only in the most heavily-wooded districts remote from civilization. It is solitary in its habits and even during the winter months, when the nuthatches, kinglets and others of its near relations are traveling together in bands, the creepers are most often found alone, or else working over the trees with two or three more of their own kind.

In hunting over a tree in the pursuit of the spiders, tiny beetles and other insects which make up its food supply, the creeper invariably starts at the base, only a foot or two from the ground. It then works upward around the tree in spirals to a height of from twenty to forty feet, seldom higher, and then swoops suddenly down to the base of another tree, acting much as if it had accidentally lost its hold and fallen.

A curious feature in its habits is that swampy land and the vicinity of water are the favorite haunts during the rainy winter months,

while during our dry summers it retires to the dryest woods it can find. This latter fact was unknown to me until the spring of 1905, and for years I had looked unsuccessfully for the nest in the low-lying, swampy districts such as the Brown Creeper (*C. familiaris*) frequents in eastern Massachusetts.

The mystery was solved, however, on May 17, 1905, by Mr. W. Leon Dawson, of Seattle, Wash., while we were putting in the day on the outskirts of Tacoma. He marked down a creeper gathering food, and we soon traced it to the nest which contained six well-grown young. The locality was very dry, on the



NESTING SITE OF THE TAWNY CREEPER

edge of a clearing in the dense fir woods, and fully exposed to the sun. Since then I have found a number of nests in similar locations, the vast majority, unfortunately, being either old ones or decoys. These last are quite plentiful, tho I am by no means certain that they are not nests which for some reason had proved unsatisfactory before completion and on that account were deserted.

Nest-building commences about the third week in April, either an oak or a fir being selected for the purpose. The only exception I have ever known to this was one bird that I had watched until it disappeared under a strip of bark fully sixty feet up in a giant cedar. Since the bird did not come out while I was watching, it is fair to presume that the nest was there.



NEST AND EGGS OF THE TAWNY CREEPER EXPOSED

The nest is placed, as a rule, from two to twenty feet above the ground, tho the majority that I have seen were under ten feet. As is customary with the other creepers it is built under a strip of bark that has scaled away from the trunk of the tree. The bird student cannot be too careful in examining every tree, as it is surprising how small a piece of bark is sufficient to hold the nest. I passed by one nest that was in plain sight and must have had eggs at the time, simply because the fir that held it was only three inches in diameter and seemed too small to be worthy of a close examination. Usually the twigs in the nest project beyond the sides of the protecting strip of bark and thus betray its whereabouts, but in some instances the strip of bark is so broad as to completely hide all signs of nesting material.

Another matter that must be guarded against I learned by a most annoying experience. Scarce as the birds are, if the surrounding conditions are suitable at least two pairs may be found nesting in the same vicinity. On May 5th of the present year I took a nest containing five slightly incubated eggs, and, as the birds are so rare, it did not occur to me to search for any more just there. Visiting the place again two weeks later in search of a possible second nesting, I found another nest containing five young only a little more than a hundred feet from the first one. This seemed a little remarkable from the fact that hundreds of bark scales may be found in apparently suitable locations without any indications of creepers being in the neighborhood.

In its composition the nest has a groundwork of twigs, the size of which de-

depends entirely on the dimensions of the space between the bark and the main trunk of the tree. Sometimes only a scant handful is sufficient, while in one nest the twigs would have filled a quart measure to overflowing. Slender dead fir twigs, from four to eight inches long, are almost invariably used, and this must frequently be a most arduous piece of business. Twigs have to be thrust into the crevice until the first dozen or so lodge firmly, then the rest is easy. In every nest quite a little mound of twigs is found on the ground below, showing how persevering the little architects must have been in the face of repeated failure. Probably they consider such twigs as unsuitable; at any rate it never seems to occur to them to pick up a twig when once it has fallen. Scattered amongst this net-work of twigs is always a little green moss and a considerable amount of down taken from ferns, willows and cotton-woods. What purpose these serve, beyond ornamentation, must be known only to the birds themselves. On top, and firmly embedded, is the egg cup of the nest, which is composed of a thick felting of fine strips from the inner bark of the cedar, with occasionally a few feathers.

The eggs are laid during the first week of May, and are usually five in number, rarely six. In color they are a dull white, plentifully sprinkled with dots of red-brown, most heavily about the larger end. The two sets that I have been fortunate enough to take are a well rounded ovate in shape. In another nest, that was torn down while I was waiting for the bird to complete her set, the broken eggs showed a decided approach to long ovate. My two sets show practically no variation in either size or shape, averaging .47x.58 inches.

In spite of the early nesting date it is very much open to doubt if more than one brood is reared in a season. Most of my spare time during the past summer was devoted to studying these birds, yet no evidences of a second nesting could be found anywhere.

A curious fatality seems connected with the young of these birds. In the two nests containing young that I have watched, all the occupants died shortly before they were ready to fly. I could not discover any positive cause for this, but am inclined to attribute it to ants with which the trees were infested. In fact it has always seemed strange to me that more nestlings are not destroyed in this manner.

The birds are very shy in the vicinity of their home, excepting after the eggs are hatched. Even when I knew just where it was and posted myself at a considerable distance, the most patient watching has never enabled me to see a bird return to her treasures.

Tacoma, Washington.

THE SOUTHERN CALIFORNIA CHICKADEE

By JOSEPH GRINNELL

Parus gambeli baileyæ

SUBSPECIFIC CHARACTERS.—Similar to *Parus gambeli gambeli*, but coloration dorsally and laterally more plumbeous, less brownish, and bill larger.

TYPE.—♂ ad.; No. 5516 Coll. J. G.; Mount Wilson, 5500 feet altitude, Sierra San Gabriel, Los Angeles County, California; November 27, 1903; collected by J. Grinnell.

COLORATION OF TYPE.—Top of head and hind neck, including loreal region, continuously black, save for a pure white superciliary stripe on each side; chin,

throat and fore chest also black; sides of head and neck, patch on chest bordering black area behind, and median abdominal region, dull white; whole back (including scapulars and rump) and sides, flanks, and crissum, pure smoke gray, without any of the buffy cast characterizing *Parus gambeli gambeli*; wings and tail mouse gray, edged with lighter.

MEASUREMENTS OF TYPE.—Length (of skin), 132 mm.; wing, 72.5; tail, 66; tarsus, 19; depth of bill, 4; culmen, 10.5.

DISTRIBUTION.—The mountains of southern California (breeding in the Transition and Boreal zones), and adjacent valleys in winter.

REMARKS.—The characterization of this new subspecies is based upon an examination of 95 skins of *Parus gambeli*. Thirty-six of these were loaned me by the United States National Museum, thru Dr. C. W. Richmond, Acting Curator, Division of Birds. The remaining 59 are from my own collection, and include 46 from southern California all of which are fairly referable to *Parus gambeli baileyæ*. Forty-seven skins from northern California, Oregon, Washington, and Rocky Mountain region from New Mexico and Arizona to Montana, are all *Parus gambeli gambeli*. One skin from Fort Tejon and others from Mount Whitney and further north in the Sierra Nevada are plainly *P. g. gambeli*. Two skins from Mount Pinos, Ventura County, are indeterminate, one being juvenal, and the other a worn adult.

The race *baileyæ* is larger and grayer than the northern and Rocky Mountain race *gambeli*. These characters are altogether constant in fully adult birds. An occasional *baileyæ* in first annual plumage has the sides not as clearly gray, being faintly overcast with brownish, and so is like *gambeli*. But the bulkier bill then serves as a criterion for recognition. I believe I would have no trouble in assorting even immatures of the two races.

I take pleasure in naming this well-marked new chickadee for Mrs. Vernon Bailey (Florence Merriam Bailey), whose accurate and pleasantly-written accounts of many of our birds form an important component of the ornithology of the west.

Pasadena, California

NOTES FROM THE DIARY OF A NATURALIST IN NORTHERN CALIFORNIA ^a

By JOHN F. FERRY

THE following notes were made while carrying on field-work in northern California for the U. S. Biological Survey, under the direction of C. Hart Merriam, during the summer and autumn of 1905. The writer was associated from July 21 to August 9 with Mr. A. Sterling Bunnell, then a medical student in the University of California, and from September 18 to November 3 with James H. Gaut, at that time a regular employee of the Survey and a field-worker of much experience.

^a Author's Note:

This article is written from notes as they were jotted down in a field diary, and at the time served merely as memoranda from which extensive reports were sent in from each locality visited. No effort was made to identify material in the field, as such material, including mammals, birds and plants, was sent in with field data only. Hence the article must lack in completeness and thoroughness, but still a conscientious effort has been made to keep out of error and to make positive assertions only when they are justified. Credit is given to others whenever possible.

Altitudes were taken by two aneroid barometers. I am indebted to the Biological Survey for a number of identifications as noted in the text.

On July 21 Bunnell and I left the train at Willets, Mendocino County, shortly after noon, and hastily got together supplies for a two week's camp. We resumed our journey after changing cars, and were soon in the depths of a magnificent redwood forest. Our train was pulled slowly up the steep and winding grades by an odd-looking, but powerful side-cog locomotive. Thus we had an excellent opportunity of studying the country from the windows of our observation car. Towering redwoods kept us in almost constant shade, and beneath these giants grew a fine forest of Douglas spruce, bull pine, madrone, tan-bark oak, white and black oak. The hillsides were carpeted with a luxuriant undergrowth, and frequent mountain streams added the final touch to a forest scene of rare beauty. This part of the journey, all too short, was ended at Sherwood, where we changed to a huge six-horse stage and continued our journey as far as Laytonville, which place we reached about seven o'clock in the evening. This part of the journey, too, had scenery varied and picturesque. Rolling hills bear an open forest of bull pine, alternating with thick undergrowth and with patches of thin yellow grass. Many pleasing contrasts are thus formed; but the chief charm of this stage ride is the thick cluster of noble Douglas spruce, into whose deep shade the road frequently plunges, or which, standing apart in the distance, are rendered conspicuous by their deep green color and lofty, spire-like forms.

Next day in the cool of the morning we were on our way again, our objective point being Covelo in Round Valley. This trip, thru the Transition Zone forest, was of continual interest. Blue-fronted Jays screamed, and California Woodpeckers drummed and called as our stage rumbled by. The majestic Douglas spruce towered above us at frequent intervals, and some striking specimens of the madrone are recalled vividly even at this writing. They were among the tallest of the forest trees, their huge spreading branches, each one a tree in itself, started from near the base, and gave the effect of a gigantic shrub. The rich, deep red color of the bark is in striking contrast to all other hues of that forest, and is a unique element of beauty. The day wore on with ever changing scenes; now we were in the deep cool shades of lofty spruce trees; now thru vistas in the forest we got views of fair valleys, or mountains, blue in the distance.

About noon we crossed the main fork of Eel River, a rapid stream of pale greenish water. From here began our ascent of the range of hills which completely girdles Round Valley. From its summit several fine views of the valley can be had. It is a golden plain of grain fields and pastures stretching away to the hill barriers on every side. Dotted about here and there are ranch houses with their green orchards and shade trees relieving the general tone of yellow. Numerous herds of grazing livestock complete a pastoral scene which is all the more pleasing because of its striking contrast with the wildness and solitude of surrounding mountain and forest. Thru this valley (Upper Sonoran Zone) on July 23, Bunnell and I made our way, and about ten in the morning we began the ascent of Asebeen Ridge at the northeastern extremity of the valley. A long, all-day climb brought us well into the Yallo Bally country, and we made a comfortable camp for the night in a miniature mountain meadow, with a small stream running thru it. For most of the next day we passed thru open forests of bull pine thru which were scattered quite frequently, live oaks and madrones, the last named trees being particularly handsome. As we got higher up the bull pines increased in size, and sugar pines became quite common.

The next day we encountered some severe climbing, and our two sturdy mules were taxed to their utmost at times. The country was typically mountainous, the steep rocky slopes and deep canyons becoming more pronounced in character till we

descended into a deep, gloomy gorge and after crossing it, began the long, steep climb up to the summit of South Yallo Bally itself. All the latter part of the afternoon we struggled up towards its enormous rounded crest, and we reached it just as the last rays of the setting sun made it light when all the lower heights were in semi-darkness.

The scene from the summit was one of memorable beauty. All about us was a wild confusion of rugged peaks and densely timbered ridges, seen dimly in the fading light. On one side was the steep slope up which we had just come, receding downwards till lost in darkness. On the other we could barely see several pockets in the mountain's side, each a miniature valley with its little green meadow and its tiny trickling brook. In one of these we made our camp almost within a stone's throw of a huge drift of snow. This camp can be easily located, for just above it on the mountain's summit is a surveyor's monument marking the corners of three counties, Mendocino, Trinity and Tehama.

A word of explanation in regard to this region might not be out of place. South and north Yallo Bally Mountains (pronounced Yollo Bolly) are the highest peaks of the Coast Range, and as such should throw some light on the problems of geographical distribution. Bunnell and myself, I believe, had the privilege of being the first naturalists to visit this interesting region and as a result of our humble efforts several new races of mammals were brought to light. The region is certainly worthy of more extended study. The altitude of South Yallo Bally is about 8000 feet. Our camp here was from July 24 to August 2. Boreal conditions of flora ruled about the summit, where spruces and probably firs were the prevailing trees. A descent of about 500 feet would bring one into the beginning of the Transition Zone, magnificent forests of bull pine (*Pinus ponderosa*) being met shortly below this point where the gentler slopes began. The small valley in which our camp was, quickly narrowed and, changing into a small rocky canyon, descended rapidly for about 300 to 400 feet where it broadened out and became thickly grown with willows and shrubbery thru which a clear brook ran. This canyon offered a great variety of conditions, and trapping and bird-collecting were excellent. The mammals we got here included white-footed mice, voles, shrews, gophers, copper-head squirrels, chipmunks, woodrats, a coon, a badger, and a weasel. Signs of coyote, wild-cat and porcupine were also met and deer were quite plentiful. The Yallo Ballies are a famous spot for bears, but we learned of their presence only thru hunters and sheep-herders.

The most abundant birds at this place were Juncos and Audubon Warblers. In merry troops they visited our camp, dashing within a few feet of where we were preparing specimens, or curiously watching us from perches but a few feet distant. Clarke Crows frequently flew with steady, even flight over our heads to some distant ridge, and Western Robins, roving thru the evergreens in small bands brought memories of gardens and homes strangely in contrast to the present reality of solitude and wildness. But the bird that most truly voiced the spirit of this lonely mountain top was the Olive-sided Flycatcher. Its clear, loud whistle had in it the quality of joyous freedom, and sentinel-like upon a lofty evergreen spire it would ring out its challenges all day long. Its vigil began with the first light of day. A few, faint, timid twitterings steal out of the gray dawn, but gaining courage as the day brightens, the bird's notes grow louder and louder until the cold, still air is filled with the wild free ecstasy.

On August first we decided to change camp as the possibilities of small mammal trapping seemed about exhausted. From two goat-herders who had their camp near by we learned of a deserted ranch some six miles distant where "varmint's"

were quite common, and for that spot we made preparations to start. A large panther skin nailed to a pine tree, recorded the capture of its owner two nights before and gave us an authentic record of this animal's presence in this locality. It was shot within the very camp and when it was stealthily watching the four-year-old boy of one of the herders. At this point it might be wise to add that the Yallos Bally Mountains are inhabited almost solely in the summer time by sheep and goat herders with their flocks. The effects of these close-cropping animals are all too noticeable. First come the sheep, the closely-massed herds moving up the mountain sides, and destroying every blade and leaf as a blight. Following in their wake, the goats with their browsing habit consume the foliage of the shrubbery as high as they can reach. Thus the region of their operations is devastated almost as thoroughly as fire could accomplish the same result. The effect upon ground and shrubbery frequenting species of birds cannot help but be harmful to some degree. We could not otherwise explain the absence of Dusky Grouse and Mountain Quail from regions thus effected, while they were commonly met with in others.

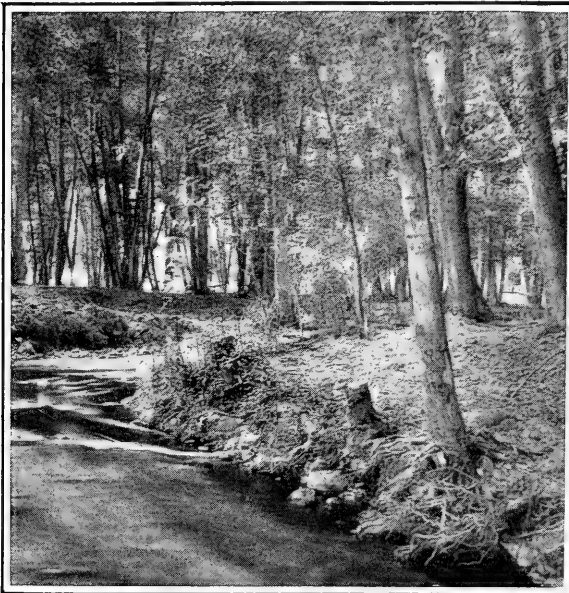
Our start on the second of August was delayed by the escape of one of the mules the night before, the animal only being captured after a five-mile tramp to a neighboring herd of horses. With a half-day thus lost, we resumed our preparations, and were just on the point of putting the pack-saddle on the other mule, when in some unaccountable spirit of perversity it suddenly lurched backwards breaking its tether rope, and with a snort and the clattering of hoofs was off down the mountain in just the opposite direction from which the other had taken. By an act of stupidity as sudden and as unaccountable as its previous one had been cunning, one of us was able to walk up to its side and pick up its lead rope. After a long trudge up the mountain we gained camp, and quickly completing our packing got under way at five o'clock, approximately just a day behind. Traveling till dark we luckily came upon a small brook and there camped for the night. Next morning an hour's traveling along the timbered ridge, upon whose upper extremity we had camped, brought us to a turn in the trail that led downward, and soon after we came out into a fenced-in clearing and in sight of the deserted ranch houses for which we were seeking. This spot, Barney's ranch, could not help but appeal to the lover of the romantic and picturesque. Nature in a relenting mood had permitted a broad level meadow to rest in the steep mountain side where rugged cliffs and heavy forests prevailed elsewhere. An old rail fence was at the very edge of a steep precipice at whose base dashed the turbulent waters of Eel River: a frowning cliff was in the rear; and on either side the forests reached to the stockade-like fence, now crumbling with age. The houses, tho long deserted, were still well-preserved and showed the thrift and intelligence of their former owners. They stood in the shade of wide branching trees and were guarded by a number of lofty spruces. Here on the wide veranda the dwellers could hear the pleasant purl of a close-by brook, or the deeper roar of the river below. Rows of fruit trees and a patch of berry bushes stood in the rear of the house, and close to the mountain side was the spacious barn. In a word every sign indicated a prosperous and well-ordered establishment, and one could scarce understand why a place of such natural beauty, and so highly improved by the art of man should have ever been deserted. But two graves on a nearby knoll probably told the story. Here lay the parents, and the children longing for greater activity and a larger world had become city dwellers, and their picturesque home was now a forgotten thing.

In the tranquil and impressive beauty of this spot, Bunnell and I got a pleasure entirely separate from that of our natural history work. Here small mammals and birds were quite abundant, but not a "varmint" did we see. We had a de-

lightful plunge in Eel River and caught a string of trout in its waters before ending our stay at Barney's. Early on the morning of August 8 we started on the long trail for Covelo. After an all-day tramp over the roughest kind of country we reached Covelo about eight o'clock at night, well fatigued. We spread our sleeping bags in a pasture that night, for the hotel of the town had burned in our absence and with it some of our belongings.

Bunnell and I returned over the way we had come as far as Ukiah. Here I left him, getting out a line of traps that night and putting up a few mammals before taking the stage for Lierly's ranch at the base of Mt. Sanhedrin, the next day. A twenty-four hour's delay was necessary at John Day's in Potter Valley, where I did some more collecting, and late on the night of August 12, our stage arrived at that extremely picturesque spot, Lierly's ranch. Here for three days I had fine small mammal collecting, but being without a gun had to neglect birds.

After a short stay in San Francisco, I left for Marshall's, Marin County, on



SHOVEL CREEK, NEAR BESWICK, CALIFORNIA

Tomales Bay, and just across from the famous headland of Point Reyes. Dr. Merriam was on the train to this point and made the journey very instructive, pointing out the characteristic shrubs and trees of the region thru which we passed. Marshall's is in a country of rolling hills, golden yellow in color from the thin coarse grass which is everywhere present. The country is practically treeless except in the well-watered canyons where occur willows and elder bushes and other similar growths. On slopes protected from the cold, steady breezes off the ocean, the California laurel grows in dense patches. This locality is cool, well-watered and birds and small mammals are fairly common.

On August 21, I joined Dr. Merriam at Camp Meeker, Sonoma County, in the midst of a beautiful forest of redwoods. Here along the brook and in the shady woods small animals were common; but a snail proved a great pest by eating the bait from small traps. Frequently nearly every trap set in damp places had its bait removed and remained unsprung. Birds here were surprisingly scarce, perhaps due to the thickly settled character of the resort.

On August 27 I left Camp Meeker and on September 4 resumed field work at Beswick, in the very heart of the Siskiyou in northern California. The famous Hot Springs here have led to the establishment of a summer resort and this has naturally had an adverse effect upon animal life. Fair trapping, however, was had along Shovel Creek, and the fine orchards and gardens connected with the hotel served to attract numbers of birds. Beswick is in a small valley—the widening of the gorge of the Klamath river, which here runs tumultuously by. The altitude

near the river is reported as 2700 feet; but high timbered ridges rise on every side, some of them with an altitude of 6000 feet and of course between these altitudes there are varying conditions of animal and plant life.

After a few days at Beswick camp was made on a high ridge at whose base was Shovel Creek, a beautiful trout stream flowing towards the Klamath River in a general northwesterly direction. This camp was well within the Canadian Zone, and in a remote spot where wild creatures were abundant. Coyotes howled every night and their tracks led to and from the spring in all directions. Wild cats were also about and one night about a quarter of a mile from camp I was astonished to find a bear track.

The pleasantest memory of this camp was my meeting with the Townsend Solitaire. Late in the afternoon as I worked putting up specimens, and was beginning to feel a sense of loneliness, one of these gentle creatures would perch on the topmost branch of a dead juniper and there till nightfall pour forth its exquisitely beautiful strains. Unconsciously there grew up an almost human attachment for the soft-hued minstrel and the listener no longer felt himself alone.

A short distance above camp there lay an extensive table-land covered with a fine forest of yellow pine, incense cedar and spruces or firs. Here in the early morning there was a fascinating experience to be had as one visited his traps. The tops only of the tall trees were reached by the sun's rays, and from thence floating softly down would come the faint notes of kinglets, chickadees and brown creepers, while the birds themselves looked like tiny insects. As the sun rose and its rays gradually penetrated the depths of the forest, the birds would as gradually descend until the lower branches, hitherto deserted, would seem alive with them.

On the 18th of September I left my solitary camp and returned to the camp where I found James H. Gaut, who from now on took general charge of the work. Together we started on the 20th for the Spanish Springs Camp, situated on a range of 6000 feet altitude and about six miles southwest of Beswick. Here we got typical Canadian Zone species, our entrance into the fir belt being curiously enough almost immediately heralded by a flock of six Canada Jays. Shortly after we saw numerous Red-breasted Nuthatches and one White-headed Woodpecker. A majestic sugar pine stood sentinel over our camp and others towered in the distance. The place was curiously lacking in small mammals and we soon left. Our journey homeward on the 23rd afforded an interesting study in the changes encountered between the Canadian and Transition Zones.

On September 25 Gaut and I started for Picard, a small hamlet in Butte Valley, a half-day's stage journey from Beswick. We were provided with a spring wagon and two horses, which was our means of travel for the next week, and proved excellent for our purpose for we could collect as we went along.

The road from Beswick works gradually up the gorge of the Klamath River until Topsey, a small stage station is reached. It is situated upon an extensive tableland bearing a fine forest of yellow pine, with a generous sprinkling of incense cedar. The altitude of this tableland is 4100 feet and its soil is a curious dark red.

We camped at the edge of a clearing near the stage station, and in the morning resumed our journey thru the yellow pine forest eastward until we reached Butte Valley. An obliging rancher allowed us to occupy an abandoned house situated at the very border of the timber and here we found some good trapping. Butte Valley is an extensive sage-brush plain into which project ridges and spurs from the surrounding high lands. These ridges are sometimes barren, sometimes more or less covered with timber which is mostly juniper; but oaks and yellow pine

are also met in these places. Picard is about two miles from our camp, and from Picard to Brownell on the shore of Lower Klamath Lake is about the same distance. We jogged along at an easy pace which gave us every opportunity to study the country. At this time the sage brush was alive with Lincoln Finches (possibly *Melospiza l. striata*) and every little while small, light-colored chipmunks would scurry away to a safe retreat.

A few miles from Picard a ridge of considerable size extends into Butte Valley and north of it begins the low, flat plain which contains Klamath Lake. Here a new character of country prevails. The sage brush diminishes in area and gives place to fertile grass-covered prairies, which are dotted by innumerable cattle. It is a scene of tranquil pastoral beauty and of a kind very unlike what one expects to see in California. It was no uncommon sight to see coyotes trotting leisurely about the outskirts of the grazing cattle, or stealthily following a miniature water-course in quest of meadow-mice. We captured one of these wary prowlers in a rather interesting manner. Some distance ahead on the left-hand side of the road, which at this place follows close by a ridge, we saw a coyote quietly nosing in the long grass. Gaut immediately, and without slacking the team, planned a means of capture. He handed the reins to me and slipping two buck-shot cartridges into a twenty gauge gun, quickly jumped out of the wagon while it was moving and then lay flat by the roadside. The coyote, on seeing the team so near was totally taken by surprise, and fearing to cross the road in front of the team, sought to gain the ridge by circling around back of the wagon. Not yet greatly alarmed, it started on an easy trot in the very direction where Gaut lay quietly concealed in the grass. Seeing our plan was working so successfully, I looked backward with bated breath, as the unsuspecting animal neared its doom. Suddenly there was a bang and the coyote doubled up in a heap: a buckshot had severed its spinal column and it lay stone dead. It was a female and had recently eaten the paunch of a sheep.

Shortly beyond the scene of this event we encountered a succession of ponds and small water-courses nearly each one of which contained its flock of ducks—mostly teal and mallards, tho approaching dusk made positive identification impossible. We paid rather dearly for our loitering by the way, for nightfall was upon us before we reached Brownell, and we spent two anxious hours wandering over the sage-brush plains in the chilly autumn wind before the twinkling light of the lone ranch kept by Mrs. Brownell came in sight.

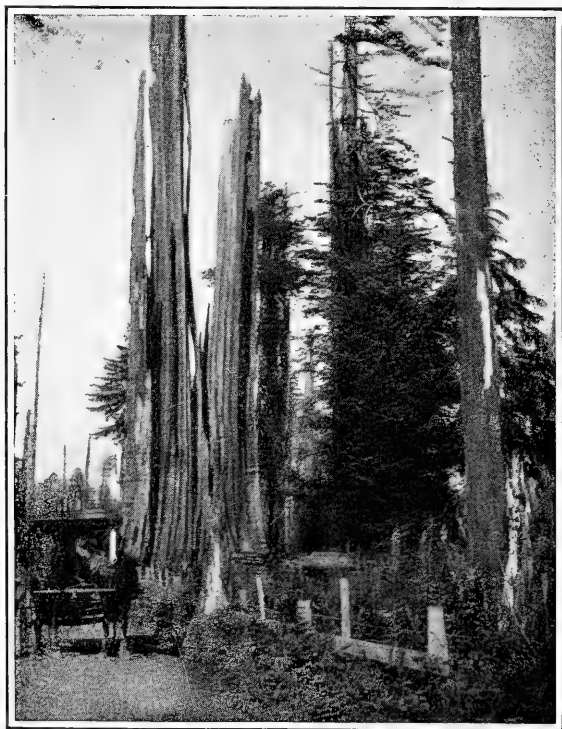
Next morning a beautiful sight greeted us. To the south of us Mt. Shasta rose sublimely in a freshly fallen coat of snow; and far to the north in Oregon, Mt. Pitt could be seen, scarcely less beautiful. In the clear, frosty air we could see ourselves compassed about by rugged ridges and volcanic hills, while to the northeast lay Klamath Lake shining like a mirror and closed in by a wilderness of green rushes. Here we found trapping excellent, but a small variety of bird-life as the country was almost absolutely treeless. The occurrence of surpassing interest, however, was the countless numbers of wild geese present. Their hosts passing from and to the lake at night and morning positively produced a din.

The region from Picard to Klamath Lake is Upper Sonoran indicated by the large areas of sage brush and junipers. Much of it is desert-like, but about Klamath Lake the meadows are very wet. We left Brownell on October 2, and returned to Beswick that night. On the evening of the 4th we took the train at Ager for Grants Pass, Oregon, which we reached about 7:30 that night. The journey was exceedingly interesting. The railroad winds its way thru the picturesque Siskiyou Mountains in a most astonishing manner, some marvelous examples of engineering being revealed. Next morning (Oct. 5) we left Grants Pass

for a 24-hour stage ride to Crescent City. For most of the morning we traversed a plain, thinly timbered with yellow pine and oak, and interspersed with *Ceanothus* and manzanita. Jack-rabbits were common and a venturesome coyote narrowly escaped a shot from Gaut's rifle.

An exciting stage ride in the dark, where the stage lamps gave fleeting views of deep gorges and sudden turns, all passed at a quick trot, brought us about 3 A. M. to Adams. There we changed stages, and after vainly trying to get some sleep, we gave up the attempt and watched the daylight slowly creep into the heavy redwood forest, which we had but recently entered. The weird, impressionistic effects in this dim light were truly fascinating and baffle description. The huge trunks of the redwoods, some of them as wide as the length of the stage, grew out of fern beds as high as a man. We followed the stage on foot, until the road emerged upon the plain where Crescent City was situated, in order to better enjoy the fascinating experience. After a hasty breakfast we took another stage for Smith River, about 12 miles to the north-east, which place we reached at noon.

The trees and shrubbery in the Pacific Coast humid belt on which we worked from now on grew with almost tropical luxuriance. Heavy moss hung to the trees, and fallen logs were completely covered with it. The thickets were almost impenetrable. The air was mild and spring-like, and nothing could surpass in pleasure outdoor life in this region. We spent until October 18 in the vicinity of Crescent City and Smith River, and then took a charming stage ride thru dense redwood forests to Requa, a cluster of houses at the mouth of the Klamath River. The flora was much the same in this region traversed as at Crescent City and Orick. The highest point on the stage-road between Requa and Crescent City is 1280 feet. On October 19 we resumed our journey to Orick at daylight, and the same general character of country was met. The stage follows along high precipitous cliffs, at whose base is the ocean. A strange spectacle seen in these dense redwood forests is a huckleberry bush, grown in the top of a broken off tree, sometimes at a height of 100 feet. We reached Orick about 12 o'clock and that afternoon set out a long line of traps. Here was a clearing in the dense redwoods, making a favorable site for our work. The highest point between Requa and Orick is 940 feet. On October 21 at noon we began another beautiful drive thru the redwoods, and by nightfall we were at Trinidad. This region was not suitable to our work so next



BURNT REDWOODS NEAR SMITH RIVER, CALIFORNIA

morning we resumed our journey and making a short stop at Eureka, a thriving business city on Humboldt Bay (Humboldt County) we began field work again at Alton Junction some 20 odd miles south of Eureka, on October 23. We trapped here till the 26th. This town is on a narrow plain thru which flows a narrow stream of clear water. Imposing cliffs and heavily timbered ridges arise in the vicinity. Tho well settled up here the wild nature of the country is still present. Deer tracks were often seen but one-half mile from town. Gaut caught a fine gray fox near these tracks.

Unexpectedly hearing of a promising trapping locality upon the high Rainbow ridges to the south, Gaut and I made a hurried departure for this spot on October 26. We passed thru a prosperous farming country, with scattered patches of coniferous and deciduous timber similar to that previously described for this humid area until we reached the prettily situated and thrifty town of Rio Dell. From there we entered the redwoods and climbed steadily upward till we reached a series of bald ridges with their slopes heavily timbered with firs, spruces and fine groves of tan-bark oak. About the middle of the afternoon we reached Crawford's Ranch, and getting directions for our further journey, started down into the deep, heavily-timbered canyon of Bear River. Here we had to block the wheels of our light, one-horse trap every few rods, so steep was the declivity. The ascent up the opposite side was scarcely less difficult and about sundown we reached McDonough's Ranch. Here our anticipations of a warm supper and a good bed were rudely shattered, as the place was temporarily deserted, and a few bites of oat-meal, raisins (trap bait) and jerked venison were all we had before going to bed in the hay loft. Next morning we gained Henley's Ranch, our destination, after traversing huge rounded ridges, grass-covered and treeless. The adjoining canyons, however, were of just the opposite character, steep and heavily timbered. Here we got wild cats, gray foxes, and a good series of spotted skunks (*Spilogale*). Our stay in this charming, isolated spot lasted till November 1, and returning to Alton Junction, the writer's field work terminated. Gaut continued the survey work considerably further down the coast.

***Æchmophorus occidentalis*.** Western Grebe. Crescent City in the ocean; at Requa, mouth of the Klamath River.

***Podilymbus podiceps*.** Pied-billed Grebe. Crescent City, Requa, Orick.

***Larus delawarensis*.** Ring-billed Gull. The gulls observed by the writer were mostly unidentified and but one specimen of the Ring-billed Gull was taken. Gulls and terns were common about Klamath Lake, Crescent City and Eureka. A common tern about Klamath Lake was undoubtedly *Sterna forsteri*, and on the flat shores of this lake were immense droves of large gulls in company with large flocks of Canada Geese. A unique sight at Crescent City was large numbers of gulls feeding upon the carcass of a dead whale.

***Phalacrocorax dilophus albociliatus*.** Farallone Cormorant. Common at Beswick and at Marshalls. Cormorants were common at Requa and presumably this species was largely represented among them.

***Phalacrocorax pelagicus resplendens*.** Baird Cormorant. One taken at Crescent City. (Identification by Biological Survey).

***Pelecanus californicus*.** California Brown Pelican. Common at Marshalls and Crescent City.

***Anas boschas*.** Mallard. These birds are reported as breeding sparingly at Beswick. They were common in the sloughs and ponds about Lower Klamath Lake.

***Mareca americana*.** American Widgeon. Very common along the coast from Crescent City southward during October. Widgeons usually formed the largest

part of every duck hunter's bag. They often spend the day in the open ocean and return to the marshes to feed at night.

Spatula clypeata. Shoveler. These ducks appear to fall an easy prey to the duck hunters. They are nearly always seen in a bag of any size. Observed at Crescent City, Orick and Trinidad.

Dafila acuta. Pintail. Seen at Klamath Lake during early October. Many Teal were observed in the region of Klamath Lake, but by curious chance they were seen either at a distance or were flushed from ponds and wet meadows at dusk when their markings could not be seen. Flocks of Blue-bills were seen at Requa and Orick but as no specimens were taken, their identity can not be stated. Scoters were frequently seen resting lazily just outside the surf at Crescent City or flying heavily just above the water. Pure white geese were seen on an inland lagoon between Orick and Trinidad.

Branta canadensis. Canada Goose. This bird was abundant about Lower Klamath Lake during our stay there. Gaut shot a fine male with the rifle. An immature bird of one of the smaller subspecies was secured at Lower Klamath Lake in a peculiar manner. A flock was seen rapidly flying in a wedged-shaped flock toward where we stood near a barn. Suddenly seeing us the flock quickly veered upwards and to one side and for a moment it was in complete confusion. Suddenly from the midst of the beating wings a helpless bird fluttered down to the ground. The bird was easily captured alive, but unfortunately was not preserved. These smaller geese (*hutchinsii* or *minimus*) were about Lower Klamath Lake in great abundance, and their return from their feeding grounds in the direction of Butte Valley lying south of the Lake, was an impressive spectacle. The lake and its adjoining plain is girdled by low hills and ridges and into this amphitheater countless numbers of the geese, and their larger cousins, the Canada Geese, would come at night to roost. The air resounded with the din of harsh, squeaking, cackling notes, which could be likened to nothing so much as to the creak of an ungreased wagon-wheel. A reminder of this experience was had at Crescent City where the geese during foggy weather and at dusk would pass from the ocean to some unknown feeding ground inland.

Branta nigricans. Black Brant. This bird is probably of more or less common occurrence in suitable localities in the Siskiyou mountains. In 1890 while staying at Beswick, I can remember a Black Brant being shot in the tall grass bordering Klamath River, and just back of the Klamath Hot Springs Hotel. On September 26, 1905, a flock of four of these birds was flushed from a swampy clearing near Topsey.

Botaurus lentiginosus. American Bittern. One or two seen at Lower Klamath Lake.

Ardea herodias. Great Blue Heron. Common at Marshalls, Beswick and Klamath Lake.

Grus mexicana. Sandhill Crane. This bird was exceedingly plentiful about Lower Klamath Lake and Meiss Lake at the southern end of Butte Valley.

Rallus virginianus. Virginia Rail. One seen at Crescent City.

Porzana carolina. Sora Rail. Seen at Lower Klamath Lake.

Fulica americana. American Coot. This bird was first met with near Beswick under very peculiar circumstances. While setting traps on a high brushy ridge about five miles from the Klamath River, a large black bird awkwardly fluttered out of a clump of mountain mahogany. As it flew clumsily down into the canyon of Shovel Creek, it was plainly identified as an American Coot. Possibly a weary migrant had fallen into this predicament thru sheer exhaustion. This species was

observed in more or less abundance at Klamath Lake, Crescent City, Requa, Orick, Trinidad and Alton Junction.

Gallinago delicata. Wilson Snipe. A number seen at Beswick and about Lower Klamath Lake. A species of Yellow-legs was seen at Klamath Lake, but at too great a distance for positive identification.

Oxyechus vociferus. Killdeer. Killdeers were seen nearly everywhere we went. They were extremely abundant at Lower Klamath Lake, where their incessant cries were almost distracting. A curious sight was that of numbers of these birds scattered about the lawns at Leland Stanford University, while the sprinklers were in operation. This recalled the robins on the lawns of the Eastern States.

Oreortyx pictus plumiferus. Mountain Partridge. These birds were first met about 500 feet below the summit of South Yallo Bally Mountain on July 28, and were met thereafter almost daily during our stay there. At this time there were many broods about and the parent bird's harsh scolding note (somewhat recalling that of the Guinea-hen) was a characteristic feature of the thick chaparral. At Barney's Ranch this species was found in company with the California Partridge.

Lophortyx californicus californicus. California Partridge. Met with practically everywhere along the coast of northern California. (Specimen from Orick identified by Biological Survey).

Lophortyx californicus vallicola. Valley Partridge. South Yallo Bally (identified by Biological Survey).

Dendragapus obscurus fuliginosus. Dusky Grouse. This bird was common in favorable localities on South Yallo Bally in ridges of the Canadian Zone in the vicinity of Beswick. In both localities the birds were shy, and when flushed from the brush would make rapid wing beats till well out of gun-range, and then setting their pinions they would sail steadily upwards to the tops of the nearest clump of firs or spruces.

Columba fasciata. Band-tailed Pigeon. Several flocks met on South Yallo Bally within the Transition Zone. The birds were wary and when flushed, the tremendous flapping of their wings was truly startling. Birds described by hunters who had seen them near Beswick were referred to this species.

Cathartes aura. Turkey Buzzard. A few of these birds met on South Yallo Bally. Seen also at Beswick, Alton Junction, Henley's Ranch and Rio Dell.

Circus hudsonius. Marsh Hawk. Common at Marshalls and profusely abundant at Brownell. The charge that these birds were chicken stealers, made in the latter place, would seem to be based on good grounds. They were the only hawk we observed there, and they frequently were seen near farm yards, and whenever possible were shot. To this circumstantial evidence was added the testimony of trustworthy persons that they had caught the hawk in the act of stealing chickens.

Buteo borealis calurus. Western Red-tail. These birds were met wherever we went.

Archibuteo lagopus sancti-johannis. American Rough-legged Hawk. An adult bird in beautiful plumage and an immature bird were taken at Beswick. They were taken in the hotel orchard which was infested with ground squirrels.

Aquila chrysaetos. Golden Eagle. Jas. H. Gaut reports seeing this bird several times at Henley's Ranch.

Falco sparverius. Sparrow Hawk. South Yallo Bally Mountain, Beswick, Picard, Crescent City, Requa, Orick, Alton Junction, Rio Dell.

Pandion haliaetus carolinensis. Fish Hawk. Klamath River, at Beswick, several.

Bubo virginianus icelus. Dusky Horned Owl. One shot at John Day's in Potter Valley, (identification by Biological Survey). The Horned Owls met on South Yallo Bally, Beswick, and Henley's Ranch, are provisionally referred to *B. v. pacificus* in the absence of specimens (see Oberholser Proc. U. S. Nat. Mus. Vol. 27, p. 177).

Asio accipitrinus. Short-eared Owl. Common at Lower Klamath Lake.

Speotyto cunicularia hypogæa. -Burrowing Owl. Observed only at Alton Junction, where one was caught in a trap purely by accident.

Ceryle alcyon. Belted Kingfisher. Common at Beswick and Crescent City.

Dryobates pubescens gairdnerii. Gairdner Woodpecker. A Downy Woodpecker met at Crescent City was supposed to be this form, and one taken at Beswick is so identified by the Biological Survey.

Xenopicus albolarvatus. White-headed Woodpecker. Only met in Canadian Zone at Spanish Springs Camp (Beswick).

Sphyrapicus ruber. Red-breasted Sapsucker. This bird was common in all Transition and Canadian Zone forests we visited.

Ceophlæus pileatus abieticola. Northern Pileated Woodpecker. This bird was first met in life by the writer in a deep gully close to Barney's Ranch. While passing along a trail in this gloomy place, a most startling and weird sound was heard. It seemed like the angry snarl of some four-footed beast, and I was in a quandary till I saw a large black bird fly up from near the ground and perch on a dead tree close beside me. I was greatly elated when I secured it. Another specimen was later taken at John Day's, Potter Valley.

Melanerpes formicivorus bairdii. California Woodpecker. Common in the Transition Zone wherever we went.

Asyndesmus torquatus. Lewis Woodpecker. To the writer this was the most interesting woodpecker met in California. As we drove along the stage road from Ager (on the Southern Pacific Railroad) to Beswick, numerous flocks of large, slow-flying black birds were frequently seen. When the stage driver told me they were woodpeckers I was greatly surprised, but fully convinced when I had shot one of them. The birds were very abundant about Beswick and very destructive to orchards there. They were systematically shot, an average of 50 per day being made during the period of their greatest abundance, which was during the first half of August.

Colaptes cafer collaris. Red-shafted Flicker. This bird was common wherever we went. Along the humid coast belt we might have encountered *C. c. saturator*.

Phalænoptilus nuttallii californicus. Dusky Poor-will. We saw a good deal of this interesting bird on the summit of South Yallo Bally. One night while we were sitting about the camp fire, a spectre-like form fluttered out of the darkness and dropped noiselessly to a big rock near by. In the day time a favorite place of concealment seems to be rocky and scantily-covered slopes. When flushed it will make but a short, erratic flight before alighting again. (Identification by Biological Survey).

Nuttallornis borealis. Olive-sided Flycatcher. Common on South Yallo Bally and observed at Spanish Springs Camp near Beswick.

Sayornis nigricans. Black Phoebe. Crescent City, Alton Junction.

Pica pica hudsonica. Black-billed Magpie. This bird was common in the brushy and scantily timbered hills in the vicinity of Lower Klamath Lake.

Cyanocitta stelleri frontalis. Blue-fronted Jay. This bird was common on

South Yalho Bally (identification of specimen by Biological Survey). This was probably the form met in the Siskiyou Mountains.

Cyanocitta stelleri carbonacea. Coast Jay. The jay so common in the humid coast belt everywhere we went was probably this form.

Aphelocoma californica. California Jay. Common in Transition Zone of northern California. At Beswick the ranges of this bird and that of *Cyanocitta s. frontalis* overlapped, both species being equally common.

Cractes obscurus griseus. Gray Jay. This species was common in the Canadian Zone about Spanish Springs Camp. (Identification of specimen by Biological Survey).

Cractes obscurus obscurus. Oregon Jay. Quite common in heavy red-wood timber at Orick.

Corvus corax sinuatus. American Raven. This bird was more or less common at Crescent City, Orick, Eureka, Alton Junction and Rio Dell.

Corvus brachyrhynchos hesperis. California Crow. Common at Klamath Hot Springs (Beswick).

Nucifraga columbiana. Clarke Nutcracker. These birds were tolerably common on the very summit of South Yalho Bally. They were the first bird to greet us as we gained the mountain top. Redwing Blackbirds were met at Marshalls. Picard, Lower and Klamath Lake and at Lierley's Ranch, but no specimens were taken, and the subspecies is in doubt.

Sturnella magna neglecta. Western Meadow-lark. This bird was common almost everywhere in suitable localities. A few pairs were met on a rocky Transition Zone mesa near Beswick. The pure, sweet, celestial quality of its song, which has charmed so many bird-lovers, was heard first at Marshalls. I had no idea the birds were about until a song of unusual sweetness reached me as I was setting traps in a hot breezeless gully. On climbing to the top of its bank I found myself on a field where was the author of the song.

Euphagus cyanocephalus. Brewer Blackbird. Common at Beswick and Butte Valley.

Carpodacus cassini. Cassin Purple Finch. This species was abundant on South Yalho Bally. Many young birds of the year were encountered there. (Identified by Biological Survey).

Astragalinus tristis salicamans. Willow Goldfinch. Smith River (Del Norte County).

Passer domesticus. English Sparrow. San Francisco, Crescent City.

Chondestes grammacus strigatus. Western Lark Sparrow. Crescent City. One seen.

Zonotrichia leucophrys gambeli. Intermediate Sparrow. Specimen taken at Alton Junction. (Identification by Biological Survey).

Zonotrichia coronata. Golden-crowned Sparrow. A flock of these birds was met on a high ridge (6000 feet) southeast of Beswick on September 18.

Spizella socialis arizonæ. Western Chipping Sparrow. Abundant on South Yalho Bally, Beswick, Orick, Trinidad. At the two former places many young of the year were seen and the adults were moulting.

Junco oregonus thurberi. Sierra Junco. These birds fairly swarmed on South Yalho Bally about its summit, the young of the year were abundant. (Identification by Biological Survey).

Junco oregonus shufeldti. Shufeldt Junco. Common on high ridges about Beswick. (Identification by Biological Survey).

Melospiza cinerea cleonensis. Mendocino Song Sparrow. Crescent City. (Identification by Biological Survey).

Melospiza cinerea samuelis. Samuels Song Sparrow. Common at Marshalls, Marin County. (Identification by Biological Survey).

Melospiza lincolni lincolni. Lincoln Sparrow. South Yallo Bally Mountain. (Identification by Biological Survey). Seen also at Crescent City, Requa, Orick and Alton Junction.

Passerella iliaca megarhyncha. Thick-billed Sparrow. Common on South Yallo Bally Mountain (Identification of specimens by Biological Survey). Seen also at Beswick and Alton Junction.

Pipilo crissalis crissalis. California Towhee. Beswick and Alton Junction. Common.

Oreospiza chlorura. Green-tailed Towhee. Not uncommon on South Yallo Bally.

Hirundo erythrogaster. Barn Swallow. Common at Lower Klamath Lake.

Tachycineta thalassina lepida. Northern Violet-green Swallow. In the evenings we would see these birds dashing in small flocks up the Eel River near Barney's Ranch.

Ampelis cedrorum. Cedar Waxwing. Two of these birds shot in orchard at Beswick.

Lanius ludovicianus excubitorides. White-rumped Shrike. Abundant in sagebrush near Klamath Lake.

Helminthophila rubricapilla gutturalis. Calaveras Warbler. Common on South Yallo Bally.

Dendroica auduboni. Audubon Warbler. This species was profusely abundant on South Yallo Bally. In rollicking flocks they visited our camp, perching inquisitively near to us as we worked on our specimens. They consorted with juncos and the two together seemingly outnumbered all other birds.

Dendroica nigrescens. Black-throated Gray Warbler. One taken at Beswick.

Geothlypis trichas arizela. Pacific Yellow-throat. Common in fruit orchard at Beswick.

Wilsonia pusilla pileolata. Pileolated Warbler. Fairly common on South Yallo Bally in willow thickets.

Anthus pensilvanicus. American Pipit. Met at Klamath Hot Springs (Beswick) Orick and Trinidad.

Cincius mexicanus. Water Ouzel. Common along Eel River near South Yallo Bally. Beswick (Shovel Creek) and at Lierley's Ranch.

Salpinctes obsoletus. Rock Wren. This cheery little bird was frequently met on the rocky cliffs northeast of Shovel Creek near Beswick.

Nannus hiemalis pacificus. Western Winter Wren. Common at Camp Meeker, South Yallo Bally, Crescent City, Requa, Orick, Trinidad and Eureka.

Certhia familiaris occidentalis. Sierra Creeper. Orick, Trinidad, Henley's Ranch, and Beswick.

Sitta carolinensis aculeata. Slender-billed Nuthatch. South Yallo Bally, Spanish Springs Camp (Beswick).

Sitta canadensis. Canada Nuthatch. South Yallo Bally, Spanish Springs Camp (Beswick).

Penthestes gambeli. Mountain Chickadee. Common at South Yallo Bally, Spanish Springs Camp (Beswick).

Penthestes rufescens. Chestnut-backed Chickadee. Crescent City, Alton Junction, Rio Dell, Eureka.

Chamæa fasciata phæa. Northern Wren-tit. Few seen at Crescent City.

Chamæa fasciata rufula. Ruddy Wren-tit. Tolerably common at Marshalls.
Psaltriparus minimus californicus. Sacramento Bush-tit. Beswick in garden.
Regulus satrapa olivaceus. Western Golden-crowned Kinglet. Beswick (high ridges) Crescent City, Alton Junction, Rio Dell, Henley's Ranch.

Myadestes townsendi. Townsend Solitaire. Quite common in Canadian Zone about Beswick.

Hylocichla guttata slevini. Monterey Hermit Thrush. South Yallo Bally, (identified by Biological Survey).

Hylocichla guttata guttata. Alaska Hermit Thrush. Beswick, September 18; Crescent City, October 13, (identified by Biological Survey).

Hylocichla ustulata ustulata. Russet-backed Thrush. Camp Meeker.

Merula migratoria propinqua. Western Robin. Common on South Yallo Bally. Beswick, Orick, Alton Junction, Rio Dell.

Ixoreus naevius. Varied Thrush. Henley's Ranch.

Sialia mexicana occidentalis. California Bluebird. Beswick, Orick, Trinidad, Alton Junction.

Sialia arctica. Mountain Bluebird. Common on South Yallo Bally moving about in restless flocks and uttering a plaintive, melancholy call. Young in the juvenal plumage seen.

Lake Forest, Illinois.

AN ARIZONA NEST CENSUS

By F. C. WILLARD

I WAS particularly impressed on my arrival in Tombstone some years ago, by the almost total absence of trees. A few scattering umbrella trees with a scant score of small cottonwoods were all that graced the city except a cluster that stood by themselves at the northern edge.

The residence of Mr. F. N. Wolcott is shaded by several good-sized cottonwoods with a fringe of small umbrella trees and mulberries lining the fence. A couple of fig trees, a peach and a weeping willow complete the list which is pieced out by climbing roses and various other climbing vines.

Numerous small birds find this haven as grateful, apparently, as we of the human kind. I was much interested this past year in the numerous bird homes built there.

A pair of Vermillion Flycatchers had their first nest on one of the branches of the largest cottonwood, about forty feet from the ground. In a honeysuckle almost under their domicile were two nests of the House Finch, while two others were in a large rose covering one side of the house.

In a dead stub of the willow a Baird Woodpecker reared a hungry brood. Another tall cottonwood was well tenanted with a pair each of the Cassin Kingbird, Bullock Oriole, Arizona Hooded Oriole, and several pairs of House Finches whose exact number I was never able to determine. A Costa Hummer had her nest in a smaller cottonwood near by.

A little later several pairs of Canyon Towhees forsook the brush of the adjacent gulches and gathered among these trees. One cottonwood held three occupied Canyon Towhee nests and two of the Arizona Hooded Oriole at one time in June, and at the same time there were three other occupied nests of the Canyon Towhee

and two of the Oriole in other trees. One Towhee also had its nest in an ivy on the front porch. She was very shy, and even when the eggs were hatching, would leave the nest as we passed in and out of the house.

Several Mockingbirds began nests and three broods were raised during the season by various pairs of this bird. A Sonora Yellow Warbler occupied the top of the tallest tree and a Plumbeous Gnatcatcher partially completed its nest in an umbrella tree. Black-throated Sparrows were always present but built their nests in the scrubby greasewood and catclaw just outside the fence, where I found several nests with eggs or young birds. A Say Phoebe spent most of her time there catching insects for her nestful in an adobe wall across the street. A couple of pairs of Cactus Wrens filled thick bunches of twigs in one of the trees with their baskets of hay, and quarreled with each other and the kingbirds. Several old oriole nests were occupied by the House Finches.

To sum up, there were on this small space, 120 by 150 feet, six or more pairs of House Finches, three of the Mockingbird, four Arizona Hooded Oriole, one Bullock Oriole, one Vermilion Flycatcher, one Costa Hummer, seven Canyon Towhee (with seven occupied nests at one time), two Cactus Wren, one Baird Woodpecker, two Cassin Kingbird—a total of twenty-eight pairs all of which raised one or more broods of young.

Tombstone, Arizona.

THE NEW RESERVES ON THE WASHINGTON COAST ^a

By WILLIAM LEON DAWSON

SOME surprise has been expressed at the recent creation by Executive order of four bird and animal preserves off our Northwestern coast. It was a case, in fact, in which the Audubon Societies, supported by the Federal authorities, were able to act before extensive damage had been done (by the white man at least) instead of decades after—as has been the rule because of the “times of ignorance.” Messrs. Finley and Bohlman had ably exploited the interests of the Three Arch Rocks, now formed into a reserve of the same name off the coast of Oregon; but it was not generally known, except to officials and inattentive settlers, that extensive colonies of nesting sea-birds existed along the ocean coast of Washington.

In July, 1906, the writer, accompanied by wife and child, undertook a canoe trip along this coast with a view to determining the ornithological resources of the major rocks and islands, some one hundred and thirty in number, which lie scattered along the coast between Moclips, the terminus of a recently completed Northern Pacific spur, and Cape Flattery, at the entrance of the Straits of Juan de Fuca. The weather was unusually propitious and we were able to reconnoiter practically all of the islets and to visit the more important ones. Early in June of the present year, accompanied by Professor Lynds Jones of Oberlin, I revisited these islands, proceeding southward via canoe from Neah Bay as far as Destruction Island, and returning by the same course toward the end of the month. At Carroll Islet, in the Quillayute Needles Reservation, we tarried several days, and the beauties of that miniature paradise must form the theme of a later report.

^a NOTE.—Hastily prepared by special request on the eve of publication. Mr Dawson will present a fuller account of his visit to the foremost of these bird islands, under the title “Bird-life on Habaahlaych,” in a future number of THE CONDOR.—Edd.

The ruggedness of this coast is occasioned apparently by a great fault, or crack in the earth's crust, running roughly north and south. The sea-floor having been dropped to westward, the upturned edges are left on shore at the mercy of the waves. Moreover, the shore line is complicated by transverse folds of rock, the precursors of the Olympic Mountains to the eastward; and these are usually marked, off-shore, by a chain of islets in descending series, the outermost member of the series being the most denuded, and the innermost being mere detached fragments of the mainland with forest crowns intact. It is thus that the more than six score of islets, which rise above the spray-line, are grouped into nine principal systems, roughly corresponding to the chief promontories.

Because of their proximity, considered as a whole, to the Olympic Mountains, and because they are in a sense the by-products of the same orogenetic movement, I have proposed for these islands the name Olympiades (pronounced Olympiah-diz). The name will be all the more convenient now that they are arbitrarily divided into three administrative groups.

All the islands between Gray's Harbor and the Straits of Juan de Fuca are cov-



A WHITE-CRESTED CORMORANT ROOKERY; QUILLAYUTE NEEDLES RESERVATION

Photo by W. Leon Dawson

ered by the executive orders, save Destruction and Tatoosh, which are already occupied by Government lighthouses, and upon which, presumably, the same measure of protection will be enforced by the Lighthouse Board. James Island, altho specified in the orders, is virtually a part of the mainland, and is already occupied for gardening purposes by the Quileute Indians. With these exceptions, none of the Olympiades has any economic value, save that of bird propagation or as a lounging place for sea-lions.

Those islets which are not fully denuded by the combined action of the elements and the sea-birds, are covered with a dense growth of bushes, chiefly a dwarfed salmon berry and salal. This crown invariably affords cover for the Rusty Song Sparrow (*Melospiza cinerea morphna*) and occasionally for the Sooty Fox Sparrow (*Passerella iliaca fuliginosa*). On Destruction Island, Russet-backed Thrushes (*Hylocichla ustulata*), Lutescent Warblers (*Helminthophila celata lutescens*), Yellow Warblers (*Dendroica aestiva*), Barn Swallows (*Hirundo erythrogaster*), Western Winter Wrens (*Olbiorchilus hiemalis pacificus*), and Rufous

Hummers (*Selasphorus rufus*) are also included among the resident land birds; while the tree-crowned islets near shore support the ordinary fauna of the mainland. Ravens and Northwest Crows, Peale Falcons and Sparrow Hawks lay the entire region under tribute, but the Corvids, at least, nest invariably upon the mainland. The Olympiades boast twelve species of nesting sea-birds, as follows:

Hæmatopus bachmani. Black Oystercatcher. At least one pair—usually no more—of these noisy fowls occupies every major rock among the Olympiades and every reef which lifts a head, say, twenty-five feet above the surf. The larger islets may support half a dozen pairs at once, and Destruction Island has about twelve. They usually nest upon the bare rock, and they prefer a station at the summit of the tide-washed shoulder or “water-table” of the island. Here their eggs fall an easy and frequent prey to that indefatigable connoisseur, the Raven.

Larus occidentalis. Western Gull. Colonies of this species occupy the chief rocks of the Copalis Rock Reservation, but the bird is only casual northward, where it is supplanted by *glaucescens*. In the great Glaucous-wing colonies, which oc-



ALEXANDER ISLAND, QUILLAYUTE NEEDLES RESERVATION

Photo by W. Leon Dawson

cur on Wishaloolth and Carroll (in the Quillayute Needles Reservation) a few typical Westerns may be seen, and between these and true *glaucescens* every gradation appears to exist. I took no specimens, but if appearances count for anything there are ten “mulattoes” to one full-blooded darky Western, on Carroll.

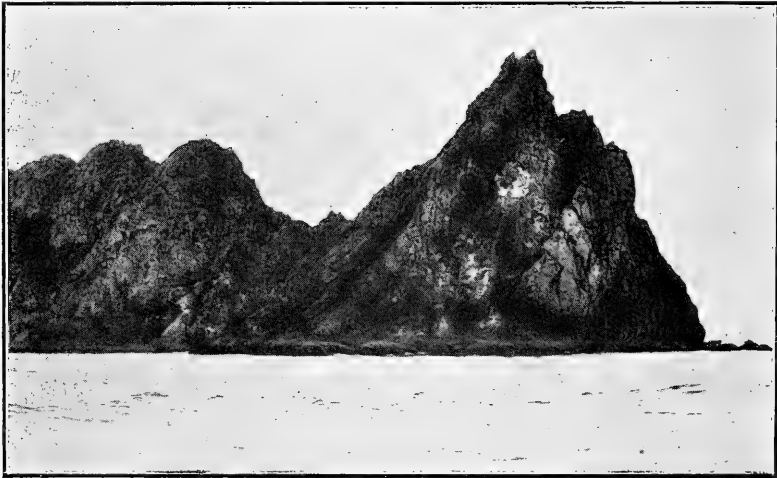
The Quinault Indians have plundered the colonies on Split Rock and Willoughby for ages, and one of the first effects of the order will be to stop that. The gulls have become very wary, not to say discouraged, and a thousand might cover the breeding population north of Copalis Rock proper (of which I have no information).

Larus glaucescens. Glaucous-winged Gull. Gulls, like Baird Cormorants, nest in scattering fashion wherever opportunity offers. From one to forty pairs, therefore, may be found about every principal rock north of Destruction Island. They colonize extensively, however, upon Cake Rock, which is nearly inaccessible; Dohodaaluh; Wishaloolth, Carroll Islet (Habaahhtaylch); White Rock (Peechwah); Old Rock (the outermost member of the Flattery Rock group); Father and Son;

and Silversides (the outermost member of the north line of the Point-of-the-Arches group). The largest colony, numbering several thousand, appears on Wishaloolth (unfortunately listed in the Executive order as "Bald Island". The name is unpardonable because of its banality. Please do not repeat it), which is a mountain range in miniature and one of the most weirdly picturesque of the Olympiades. A modest estimate of the total number of this species among the Olympiades is 10,000.

Like the Westerns the Glaucous-wings have suffered much from Indian depredations. The Siwash has been reared on gull omelette or gull fricassee or both at once, and the deprivation will undoubtedly work some hardship. The Quileutes and Ozettes are, however, for the most part, peaceful, law-abiding folk, and I have found them highly trustworthy.

Phalacrocorax dilophus cinnatus. White-crested Cormorant. Something like a dozen colonies were found, confined of necessity in each case to the sharp ridges or to the barren acropolis itself. North Rock affords a typical instance.



WISHALOOOTH: SITE OF THE LARGEST GLAUCOUS-WINGED GULL COLONY;
QUILLAYUTE NEEDLES RESERVATION

Photo by W. Leon Dawson

Here on the very summit occurs the largest colony of the coast, numbering near a hundred pairs.

The Shags have suffered not a little from the native egg hunters, but they have suffered more from Ravens. Curiously enough, I know of no instance in which their eggs or young have been molested by Glaucous-winged Gulls.

P. penicillatus. Brandt Cormorant. Four colonies were found, one of some fifty birds on the summit of Grenville Arch; one of fifty on Ghost Rock (not "Cohort" Rock—*vide* "Pacific Monthly", April 1907, p. 381); one of fifty-eight on the crest of Jagged Islet, since deserted; and one of about the same number as the last on "the pinnacle" (Paahwoke-it) west of Carroll.

P. pelagicus resplendens. Baird's Cormorant. The Baird Cormorant is the ubiquitous bird of the Olympiades. Not a sea-wall but has some niche or pedestal or boss, where this intrepid shag may "lay her young"—intrepid, that is, where only the sea is concerned, but timorous past all reason before mankind. She

usually manages to find some inaccessible place to put her eggs, but she quits the nest on the slightest provocation, or none, and the Raven laughs in his sable sleeve. An estimate of 6,000 would scarcely cover the Baird Cormorant population.

Oceanodroma kædingi. Kæding Petrel. Petrel cities exist on Erin (off Grenville Point), Alexander Islet, Dhuoyuatzachtahl, Wishaloolth, Tatoosh, and Carroll. The last named is a mere village of some hundreds. The metropolis is evidently on Dhuoyuatzachtahl, where in the space of an acre perhaps 40,000 of these eery sea-waifs nest. Very possibly other colonies may be found on such rocks as Cake, Rounded Islet, and Silversides, as these were not minutely inspected.

Strangely enough, no Fork-tailed Petrels (*Oceanodroma furcata*) were seen along the entire coast, altho they are said to abound on the Oregon rocks.

Lunda cirrhata. Tufted Puffin. Many of the Olympiadic islets have sloping grass-covered sides and these are invariably occupied by Puffin burrows. Thirteen major warrens were noted, and of these the largest occurs on Carroll, whose Puffin population in 1907 we estimated at 10,000. Puffin burrows are usually easy of access, inasmuch as the more precipitous rocks are generally denuded; but now and then one sees a high-hung colony as safe as tho transplanted to Elysium. Contrary to the experience (?) of certain imaginative writers, I have found these birds absolutely silent.

Cerorhinca monocerata. Rhinoceros Auklet. The only colony of this bird appears on Destruction Island, whose slanting sides, grass-covered, brushy, or barren, are completely given over to them. This island, unlike the remaining members of the Olympiades, is composed of glacial, or glacio-alluvial, deposits in place, a mere detached bit of the mainland floor; of a piece with the Hoh valley four or five miles away. On this account, therefore, it offers asylum to birds which insist on driving long tunnels—ten to fifteen feet long in some instances—and the Auklets on Destruction must number close on to 10,000.

Ptychoramphus aleuticus. Cassin Auklet. Because of its early nesting this bird was overlooked in July, '06. In June we found them upon Dhuoyuatzachtahl, Alexander, and Carroll, and they doubtless occur in season at other places.

Certain cries heard on Tatoosh Island on the night of June 4th we were not able to investigate because of weather conditions, but suspected Cassins.

Cephus columba. Pigeon Guillemot. Not common along this coast. Perhaps not above fifty pairs to be found—these chiefly at Grenville Arch, Willoughby, Destruction, and Carroll. One bird nesting on one of the sandstone reefs which guard Destruction Island, had squeezed herself into so narrow a chink that she was glad to call one egg a "set."

Uria troile californica. California Murre. Murres do not occur in great numbers. More occur upon Carroll Islet and its adjacent pinnacle, Paahwoke-it, than elsewhere; but an estimate of a thousand would cover them. The crown of the Grenville Pillar holds perhaps 500, and 300 more find lodgment on Willoughby. Apart from these three stations only small groups of ten or a dozen pairs may be found.

As a result of the July reconnoissance an estimate of 40,000 was placed upon the entire sea-bird population of the Olympiades, other than the Petrels. In June last we were inclined to scale up Gulls and Baird Cormorants one-fourth, Puffins and Rhinoceros Auklets one-half, leaving the total, including Cassin Auklets, at nearer 60,000. The Kæding Petrels, of course, constitute the element of uncertainty, but an estimate of 100,000 will at least represent the "order of magnitude" of their numbers. Altogether an estate well worth preserving by Uncle Sam for Uncle Sam's nephews, of whom we are gratefully which.

Seattle, Washington.

FROM FIELD AND STUDY

Field Notes From Central California.—*Passerella iliaca iliaca*.—One of these rare Eastern visitants was taken by the writer on the Big Sur River in Monterey County, California, on December 27, 1903. The specimen was shot accidentally while collecting some of the common Yakutat Fox Sparrows. The specimen is a full grown male in fine plumage and identical with a series of typical eastern birds which were in the California Academy of Science collection. The bird was identified by Mr. L. M. Loomis.

Troglodytes aedon parkmani.—A female specimen of the Parkman Wren was taken at Sur, Monterey County, California, on December 21, 1903. This bird is a common summer resident here but winters in the warm San Diegan district and this specimen was left behind for some unknown cause. The specimen is a female of the year, probably, and in rather poor plumage. The exceptionally warm winter may have had something to do with the lagging behind of this bird.

Zonotrichia albicollis.—I have to record an additional specimen to the list of winter visit records by this bird. A male bird was shot from a flock of Intermediate Sparrows at Petaluma, Sonoma County, on March 16, 1903. This specimen is in typical spring plumage; the brown stripes on the head being half moulting to white and black of the adult bird, while the ashy throat patch is about half white. This identification was confirmed by Mr. L. M. Loomis at the California Academy of Sciences.—J. R. PEMBERTON, *Stanford University, California*.

Dafila acuta Breeding at Buena Vista Lake, Kern Co., California.—During late May and early June, 1907, I examined two nests of *Dafila acuta*, each containing six eggs, at Buena Vista Lake. I also noted several females with broods of young just out of the nest. One set of six eggs, which for some reason had been deserted by the bird, I hatched under a hen at the dredger camp. The hen refused to accept the guardianship and several of the youngsters died. These I "made up" and are now in my collection.

There is no doubt of the authenticity of these records as communication with the Editor of THE CONDOR will verify. Anyone visiting Buena Vista Lake during May and June should find *Dafila acuta* fairly common.—C. B. LINTON, *Los Angeles, California*.

The Common Tern and Ruddy Turnstone in Southern California.—September 25, 1907, Mr. C. B. Linton of this city gave me two terns which he had taken that day at Alamitos Bay. One of these was *Sterna forsteri*, but the other which was an immature female, I believed to be *Sterna hirundo*. This identification has been confirmed by Dr. Richmond of the National Museum. Upon looking over the other terns which Mr. Linton had taken at the same time we found three more *hirundo*, the rest being *forsteri*.

September 20, 1907, at Sunset Beach, Orange Co. Cal., I took a female Ruddy Turnstone (*Arenaria morinella*) in fall plumage. This bird was with a flock of Black-bellied Plovers on the sandy beach.—G. WILLET, *Los Angeles, Cal.*

Pacific Fulmar in San Diego Bay.—While rowing in San Diego Bay near Hotel del Coronado, November 4, 1906, I secured an adult male Pacific Fulmar. It was resting on the water about 40 feet from shore. My attention was first attracted to it by some children on shore who were pelting it with pebbles, the Fulmar paying no attention to them.—C. B. LINTON, *Los Angeles, California*.

Is the Mountain Bluebird Resident at High Altitudes?—During the latter part of February and early March of this year (1907), *Sialia arctica* was very numerous in and about Flagstaff, Arizona, altitude 6800 feet; in fact, the commonest bird. That period also covers the coldest weather for that locality. And as this bird is a known breeder in northern Arizona (San Francisco Mountains), can we not infer that they are resident in that zone?—AUSTIN PAUL SMITH, *Benson, Arizona*.

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

JOSEPH GRINNELL, Editor, - Pasadena.

J. EUGENE LAW, Business Manager, Hollywood, Cal.

WILLIAM L. FINLEY } Associate Editors
ROBERT B. ROCKWELL }

Pasadena, California: Published Feb. 1, 1908

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States
Mexico, and U. S. Colonies, payable in advance

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other
countries in the International Postal Union.

Claims for missing or imperfect numbers should be
made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the
Editor

Advertising Rates on application.

EDITORIALS

The editorial staff of THE CONDOR has been strengthened by the addition of Mr. Robert B. Rockwell, of Denver, who becomes Associate Editor. This is fortunate, because the geographic range of our magazine includes a very large region (west of the Mississippi) and it is propitious that the work be represented at several separate points in our field. Mr. Finley represents us in Oregon and Washington, and now we have Mr. Rockwell pledged to advance our magazine's interests in the Rocky Mountain region.

We wish it understood by our contributors that there is no intended significance in the arrangement of articles in any issue, beyond the selection of what we consider the most suitable photograph for the frontispiece. Sometimes we try to have illustrated and unillustrated articles alternate with one another, but sequence in no wise indicates order of merit.

We learn that Mr. Robert Ridgway expects to leave about March first for a six months' visit in Costa Rica. Upon his return he will resume work on Part V of his "Birds of North and Middle America."

The first National bird reservation to be established on the Pacific Coast was formally ordered by President Roosevelt on October 14, last. The area set aside is Three Arch Rocks, a group of islets on the coast of Oregon. The bird-life of these rocks was studied by Finley

and Bohlman (see CONDOR Vol. VII, pp. 119-161) and its protection has resulted chiefly from the endeavors of these energetic members of the Oregon Audubon Society.

We are further informed that thru the efforts of Mr. Dawson, whose article on the subject appears on another page of our present issue, three more breeding places of sea birds, on the Washington coast, have been officially reserved. These three reservations extend from Copalis Rock to Cape Flattery inclusive, a distance of nearly one hundred miles. Proceeding from south to north they are named:

Copalis Rock Reservation, including "all small, unsurveyed and unreserved islands lying off the coast of the State of Washington in the Pacific Ocean between latitude 47 degrees 20 minutes north, and 47 degrees 29 minutes north" * * * "reserved and set aside for the use of the Department of Agriculture as a preserve and breeding ground for native birds and animals."

Quillayute Needles Reservation, extending from 47 degrees 38 minutes to 48 degrees 2 minutes north.

Flattery Rocks Reservation, extending from latitude 48 degrees 2 minutes to 48 degrees 23 minutes north. (The gap between the first and second reservations contains no islands.)

One of the most important factors in bird protection in Colorado is the State Bureau of Child and Animal Protection. This is a state organization with offices in the State Capitol Building which, under the efficient management of Secretary E. K. Whitehead, has accomplished more along this line than any other Humane Society in the United States.

A circular, size 11 inches by 14 inches, has been printed on very heavy durable paper, 1000 of which have recently been posted in conspicuous places all over the state, by this organization. The publicity thus given to the law protecting birds and their nests and eggs cannot fail to have a far-reaching effect thruout the wilder mountainous sections of the state, where the game laws are little known and where officers of the law are necessarily few and far between.

Doubly efficient will this warning be on account of the fact that there are representatives of the State Bureau at nearly 300 points in the state, persons who are serving without compensation, and simply on account of their intense interest in this line of work. These people may be depended upon to see that these laws are enforced when they have the assurance that an active and aggressive organization is back of them.

Mr. Whitehead has gone on record as giving assurance to all interested parties that he will rigorously prosecute all violators of the bird law if sufficient evidence is furnished him. Consequently it is up to the bird students of Colorado to see that evidence of all violations of the bird laws is put in the hands of the State Bureau of Child and Animal Protection.
—R. B. R.

The following notice appeared in the Portland *Oregonian* for December 8, 1907:

"A consignment of European song birds was received last week by C. F. Pfluger, secretary of the Portland Songbird Club. The consignment consisted of song thrushes, chaff and goldfinches, black caps and skylarks. The birds were imported direct from the Hanover district in Germany and from England. Seventy pairs of the birds were placed in the aviary at the City Park to be sheltered until Spring, when they will be liberated. Sixty pairs of skylarks were also forwarded to bird clubs in Washington, Yamhill, Marion, Clatsop and Multnomah Counties, where they will later be set free.

"The Portland Club is also making arrangements for the importation of mocking birds, which are expected to reach this city early next Spring. Much good will result from the addition of these birds, as they are known to be effective insect exterminators, and are active, hardy and well adapted to the climate of this section."

Perhaps some such idiotic procedure as the above accounts for the record of the Chaffinch at Monterey (see CONDOR VIII, March, 1906, p. 58). The next thing we know we will have Chaffinches and Goldfinches to deal with along with the "English Sparrow problem." The Audubon Societies should bend their efforts against the introduction of foreign birds, if they wish to keep our native avifauna intact.

Mr. Finley suggests that the popularity of the introduction idea in Oregon is probably due to the importation of the "China Pheasant," so successful, at least from the sportsman's standpoint.

PUBLICATIONS REVIEWED

AMERICAN BIRDS | STUDIED AND PHOTOGRAPHED FROM LIFE | By WILLIAM LOVELL FINLEY | Illustrated from Photographs by | Herman T. Bohlman | and the Author | Charles Scribner's Sons | New York | 1907 (our copy received December 10, 1907). Pp. I-XVI, 1-256, 127 halftones on book plate paper. (\$1.50.)

This is the most attractive popular bird book of the year. In fact it contains the greatest number of photographic illustrations, and illustrations of the greatest scientific value, of any book we have ever seen. The following well-stated epitome of the scope of the book constitutes part of the Prefatory Note:

"An important and sometimes difficult phase in the study of bird life is to observe accurately and report without false interpretation the habits and actions of birds. The naturalist who uses the camera in the field often has the

advantage of backing his observations with proof (not an unimportant thing in nature writing of today), and if he produces good authentic photographs, one may be quite sure they were not secured without patient waiting and a careful study of his subjects.

"In this book no attempt has been made to include all the different bird families, but a series of representative birds from the hummingbird to the eagle has been selected. Each chapter represents a close and continued study with camera and notebook at the home of some bird or group of birds,—a true life history of each species. It is the bird as a live creature, its real wild personality and character, that I have tried to portray.

"Many of these studies were made in the West, but in the list of birds treated an effort has been made to get a selection that is national in scope. In the popular mind a song sparrow is a song sparrow from ocean to ocean, yet scientifically he represents over a dozen subspecies, according to the part of the country in which he lives. To the ordinary bird lover, however, a robin is the same east and west, and the same is true of the chickadee, flicker, wren, grosbeak, vireo, warbler, hawk, and others dealt with in the following chapters."

The twenty-one chapters are titled as follows: The Hummingbird at Home; The Chickadee; Photographing Flickers; The Yellowthroat; A Family of Grosbeaks; The Red-tailed Hawk; Jack Crow; The Owl, Bird of Night; Rearing a Wren Family; The Weaver of the West; Jimmy the Butcher-bird; The Warbler and His Ways; Kingfishers; Sparrow Row; Two Studies in Blue; Basket Makers, The Vireo and Oriole; Phoebe; A Pair of Cousins—Robin and Thrush; Gull Habits; In a Heron Village; The Eagle of Mission Ridge.

We feel a sort of pride in looking over this book, for it is a product of the West. Both Mr. Finley and Mr. Bohlman are western students, and the present results of their work is in no way inferior to that of the East or that of Europe. We heartily recommend the book to everyone.—J. G.

EVOLUTION AND ANIMAL LIFE | an elementary discussion of | facts, processes, laws and theories relating | to the life and evolution of animals | by | DAVID STARR JORDAN | President of Leland Stanford Junior University | and | VERNON LYMAN KELLOGG | Professor of Entomology, and Lecturer in Bionomics | in Leland Stanford Junior University | [quotation] | [vignette] | New York | D. Appleton and Company | 1907 [our copy received Oct. 1, 1907]; pp. I-XII, 1-490, 3 colored plates (of birds), 298 text figures.

No person can be a thoroly successful special-

ist in any one field of natural history without at the same time knowing something of the general problems, laws and theories of biology. No student of birds should pursue his narrow line of study, oblivious of the main results of work with the other classes of animals. The all-important facts and processes of organic evolution are as essential a feature of ornithological knowledge, as of a knowledge of insects, or fishes, or of plants.

In their new book, titled as above, Jordan and Kellogg present a well-selected series of facts bearing on the subject of evolution, derived from the latest work in both Europe and America. The early theories and arguments of Darwin, Lamarck and others, and the recent laws and theories of Mendel, Galton, DeVries, and Burbank, are succinctly presented. And the views of the authors themselves appear to us to reflect the very sanest of recent opinions on the many disputed points discussed. The treatment is popular, in the sense of being clear and easily understandable by the lay reader. The abundant illustrations are lessons in themselves.

In fine, we would recommend the book as the very best and most up-to-date on the subject of evolution, a book that every bird student should read and study, in order to have a broad foundation-knowledge upon which to build his ornithology.

We regret to note not a few typographical or perhaps chirographical slips, such as doubtless resulted from hurried proof-reading. A few minor errors are noticeable; such as the nest of "Rufous hummingbird" photographed at Stanford University, (Fig. 274) very improbably that species, but the Allen hummingbird (*Selasphorus alleni*). Nor have we ever seen any species of "Aythya" marked like those in Fig. 276. The composition in places could have been smoothed over a bit.

But the subject-matter and mode of presentation of the book cannot be criticized, as far as we are concerned. We urge those of our readers who wish to acquire a familiarity with the latest evolutionary views, to make use of this, the best exposition of the entire subject as it now stands to be obtained.—J. G.

THE BIRDS OF NORTH AND MIDDLE AMERICA: A Descriptive Catalogue [etc. 7 lines]. By ROBERT RIDGWAY | Curator, Division of Birds | — | PART IV. | Family *Turdidae*—Thrushes. Family *Zeledoniidae* | Wren-Thrushes. Family *Mimidae*—Mockingbirds. Family *Sturnidae*—Starlings. Family *Ploceidae* | Weaver Birds. Family *Alaudidae*—Larks. Family *Oxyruncidae*—Sharp-bills. Family *Tyrannidae*—Tyrant Flycatchers. Family *Pipridae*—Manakins. Family *Cotingidae*—Chatterers. | — | Washington: | Government Printing Office. | 1907. (our copy re-

ceived August 24) = Bulletin U. S. N. M. No. 50, Part IV, | pp 1-XXXII, 1-974, pll. I-XXXIV.

In the four volumes of this great work now published there have been described 1,675 species and subspecies, or somewhat more than half the total number of North and Middle American Birds." The amount of work represented in the 4000 closely printed pages already issued is marvelous, when we bear in mind that it means the labor of one man. The synonymies alone constitute an undertaking of great magnitude. There is not the least doubt in our minds but that Mr. Ridgway's work is not only the greatest in point of size, but the most thoro, of all the systematic treatises on American birds ever issued.

The title, above quoted, indicates the scope of Part IV. We will simply call attention to a few of the points of interest in regard to Western species.

Mr. Ridgway enters in full standing both the Monterey Hermit Thrush (*Hylocichla guttata slevini*) and the Sierra Hermit Thrush (*H. g. sequoiensis*) while the alleged *Hylocichla ustulata oedica* is included under *H. ustulata ustulata*. *Ixoreus naevius meruloides*, a supposed northern form of the Varied Thrush, is considered inseparable from *Ixoreus naevius* proper. *Planesticus* is introduced as the genus name for the Robin. The range of the San Pedro Bluebird (*Sialia mexicana anabelæ*) is extended to include the "mountains of San Diego and southern Los Angeles counties, California, and along the eastern slope of the Sierra Nevada as far as Mount Lassen." The Pasadena Thrasher (*Toxostoma redivivum pasadenense*) is not considered separable from the California Thrasher (*T. r. redivivum*). The Horned Larks are entered practically as worked out by Oberholser. A sort of dichromatism is ascribed to certain Empidonaces, as *hammondi*, *wrightii* and *griseus*. This discovery is of extreme interest; yet it still more complicates the differential characterization of these difficult species. The genus *Contopus*, for the Wood Pewees, becomes *Myiochanes*.

In lack of the long-delaying new A. O. U. check-list, it seems to us that students can do no better than follow Ridgway's lead implicitly in matters of nomenclature. In fact we do not know but what the check-list had better give way for the present to the "Birds of North and Middle America," leaving the latter as the only recognized authority.—J. G.

RESEARCH IN CHINA | Expedition of 1903-04, under the direction of Bailey Willis | — | REPORT ON ZOOLOGY | by | ELIOT BLACKWELDER | [extracted from Carnegie Institution of Washington Publication No. 54, | Research in China, Volume I, Part II, pages 481-508, 6 plates, [vignette] | Washington, D. C.: | Pu

lished by the Carnegie Institution of Washington | June, 1907.

This paper presents rather an imposing appearance to have been based on such meager data. Lists of Amphibians, (2), Reptiles (5), Birds (130) and Mammals (5), are given, and yet only 75 specimens of all the vertebrates together are stated to have been obtained; and the author was evidently quite unfamiliar with the biota of the region. It is no wonder that nearly half the species are more or less in doubt. Dr. C. W. Richmond deserves the credit for naming the bird-skins, which were submitted to him for determination. One bird, *Olbiorchilus fumigatus idius* is described by him as new. The six colored plates are by J. L. Ridgway.—J. G.

BIRDS OF LABRADOR, by CHARLES W. TOWNSEND, M. D., and GLOVER M. ALLEN [=Proc. Boston Soc. Nat. Hist. Vol. 33, No. 7, pp. 277-428, pl. 29; July, 1907].

This is a review of our knowledge of the ornithology of Labrador, based upon all previously published accounts together with some new matter resulting from a visit by the authors in 1906. An extensively annotated list shows that 259 species have been accredited to Labrador. Of these, 213 are authenticated species, 2 are extinct, and 44 doubtful or erroneous. The historical phase of the subject is accorded detailed attention, and we are given most interesting quotations from the records of the early explorers. The authors also discuss the "Faunal Areas" of the region. The Arctic, Hudsonian and Canadian life zones are found to be represented. The entire paper shows the results of skilled and conscientious investigation and raises the standard which faunal papers of the future will be expected to reach.—J. G.

EIGHTEEN NEW SPECIES AND ONE NEW GENUS OF BIRDS FROM EASTERN ASIA AND THE ALEUTIAN ISLANDS, by AUSTIN H. CLARK [=Proc. U. S. Nat. Mus. Vol. XXXII, pp. 467-475; June 15, 1907].

This paper includes the description of a new Rock Ptarmigan, from Adak Island, one of the central links in the Aleutian Chain. The bird is called *Lagopus rupestris chamberlaini*, and is characterized [in nuptial plumage of male?] as being the grayest and one of the lightest of the Aleutian insular forms of the Rock Ptarmigan.—J. G.

THE BIRDS OF IOWA, by RUDOLPH M. ANDERSON [=Proceedings of the Davenport Academy of Sciences Vol. XI, pages 125-417, 1 map; March, 1907].

Anderson's "The Birds of Iowa" is an admirable paper thruout, the best gotten up state list that has come to our notice. It has the stamp of scholarly workmanship. There is

evidence of long-continued research into the literature of the State, and careful attention to detail. The typography is excellent. Iowa ornithologists are to be congratulated upon so satisfactory an exposition of their avifauna.—J. G.

A PRELIMINARY CATALOG | OF THE | BIRDS OF MISSOURI | by | OTTO WIDMANN | St. Louis, Mo. | 1907 [our copy received Dec. 7, 1907]. Pp. 1-288.

While the word "preliminary" occurs in the title, this book is really an exhaustive treatise on the subject of the distribution and migration of Missouri birds. It seems to be an implied intention on the part of the author to publish later a report covering the life histories of the birds of the region, and if this is carried out with the same fidelity as the present "preliminary" report, we will have access to an ideal compendium of Missouri ornithology.

The present Catalog contains 383 species, of which 162 are breeders. Of the 383, 30 have not been actually taken within the State, thus leaving 353 fully authenticated species. Each species is annotated with localities and dates of occurrence, and with the rarer species the notes are given in detail.

Preceding the Catalog proper is an Introduction followed by a Bibliography, Explanations (of terms employed and method of treatment), and discussions of Faunal Areas, The Climate, Topography, Decrease of Birds and Bird Protection. Each of these topics is handled in a clear, concise manner, giving one the impression that the writer has thoroughly studied his subject before attempting to publish upon it. The latter, it may be remarked, is not an overly common thing in American ornithology in the present age. Mr. Widmann is only now beginning to give us the general results of his twenty years of study upon Missouri birds, and we therefore look up to him as being in a position to handle his subject authoritatively.—J. G.

Volume III of THE WARBLER, published by MR. JOHN LEWIS CHILDS, came to hand in November. It consists of 56 pages, besides a colored frontispiece. There are six half-tones of nests and eggs. Two of these show eggs of the Harlan Hawk taken in Iowa. The excellent colored plate and brief accompanying note pertain to the eggs of the Santa Catalina Partridge (*Lophortyx catalinensis*). P. B. Peabody follows with two illustrated articles on "The Breeding of the Arctic Towhee" and "Rock Wren the Cliff Dweller." J. W. Clayton furnishes "Field Notes from the Upper Penobscot, Maine." Two essays by John Bachman, written fully 65 years ago, one of which is printed here for the first time, show some decidedly good field observations on the habits of Vul-

tures and the migration of birds in general. Charles R. Keyes tells of the "Breeding of Harlan's Hawk in Iowa." Mr. Childs recounts some "Long Island Bird Notes for 1907." And the same author publishes extracts from an old manuscript consisting of "A Marvelous Collection of Unpublished Bird Songs." The one on the Bobolink, however, has long been a favorite selection for recitation. It was published in the *Century Magazine* about 1890. The Volume closes with a brief account of "The Childs' Library of North American Ornithology. We judge this to be now the finest private bird library extant.---J. G.

THE DEVELOPMENT OF NESTLING FEATHERS, by LYNDS JONES (=Laboratory Bulletin No. 13, Oberlin College; Oberlin, Ohio; 1907. [November]; pp. 1-18, pl. I-VIII [=142 figg.]).

According to Mr. Jones' statement the purpose of this paper is to "give a more complete account of the development of down," and to do away with any conception which may be held at present that the down is a structure distinct from the first definitive feather. While admitting that a continuity between the two has been recognized, he maintains that the down feather is not, as considered by most writers, a relatively separate and distinct feather, but is simply the distal end of the first definitive feather.

The first part of the paper is given over to a discussion of materials and methods. The author then goes on to trace the histological development of nestling down, which differs to some extent from that of the definitive feather. For example, the epitrichial layer of the skin forms the sheath of the down, but takes no part whatever in the formation of the first definitive feather. The development of the barbs and barbles in the down is essentially the same as in the first definite feather, tho as Mr. Jones points out the developing down fundamēt has fewer ridges and a shorter diameter than the developing definite feather fundamēt, and the down barbles are never provided with hooked barbicels. Further, he finds no chief ridges in the developing down, whereas in the definitive feather they mark the place where the shaft will later be developed. Barbles, however, are found on all down barbs except on certain spike-like feathers from the cuckoo. In the developing down feather the ridges extend from their proximal beginning the full length of the down, while in the definitive feather each ridge extends from its proximal insertion on the developing rhachis only a part of the way to the distal end of the feather germ. This is one of the main distinctions between the down and the definitive feather.

In the latter part of the article the relation of the down to the first definitive feather is taken up more in detail, and several series of cross-sections are figured to show the manner of

passing of the so-called down barb-vanes (the barb with its barbles) into the definitive barb-vanes. In most birds the down barb-vane passes directly into one or more definitive barb-vanes. Occasionally in the true down of certain altricial birds a "quill" is formed, but the author asserts that this is due more to reduced blood-supply and the drying influence of the air than to any innate tendency to form a true quill, and that it may often be split up if pressed between two hard surfaces.

Mr. Jones asserts that the first feather to appear in the ducks is made up of the true first down plus the first definitive feather. He thus very cleverly advances this instance as an example of the primitive relation between the down feather and the first definitive feather.

Altho the paper presents the facts of the case in a new light, it does not seem to a superficial observer that the proposition that the down is not a relatively separate feather is proved. The growth of the down and the succeeding definitive feather has always been considered to be continuous. Dr. Dwight, in speaking of down, says, "It is last seen as waving filaments at the apices of the feathers which succeed it." Mr. Jones in the present paper shows a large series of photographs of first definitive feathers bearing down filaments at their tips. Students of feathers have always recognized the fact that the down is borne directly at the end of the first definitive feather, and yet have considered the down a relatively separate feather. The down feather, and all the definitive feathers succeeding it, grow from the same papilla. Referring to the second crop of definitive feathers (the first winter plumage) Dr. Dwight remarks that a feather of the juvenal plumage may occasionally be found borne at the end of a feather of this dress! It would appear to be just as true, then, that morphologically the first definitive feather is the distal end of the second definitive feather as it is that the down is the distal end of the first definitive feather. The fact that the ecdysis may be discontinuous between the first and second definitive feathers alters the case morphologically not a whit.

In support of his point that the first feather of ducks represents a combination of the down and first definitive feather of other birds Mr. Jones says that its stages of development and growth cover the period commonly taken by the development of both the down and first feather in other birds. The question of time proves nothing, however. The conception as commonly held that the first feather is the *down*, and that the second feather is the first definitive, seems to be more in accordance with the facts. The first feather is modified as a covering for the young. In most birds no thick covering is necessary, but in ducks, which need such a covering a down feather with a shaft is developed. Again, why should the structure and development of Anserine first feathers be regarded as indicating the primitive structure and mode of differentiation of any typical first feather rather than the structure and development of, say Passerine first feathers? Both have in all probability diverged widely from the primitive common type, and now each is highly specialized to serve its own

purpose. Allowing, however, that the first feather of ducks is the first definitive feather plus the down, the relation between the first definitive and the second definitive is much clearer. In figures 90-96 Mr. Jones shows photographs of the second feather of ducks, which is the second definitive according to his assertion, bearing at its distal end the first feather, which he regards as the combined down and first definitive. We see then that the relation between the first and second definitive feathers is practically the same as that between the down feather and the first definitive. Yet these are all regarded as relatively separate feathers, and certainly deserve to be in the light of all known facts.

The paper is interesting as showing the mode of connection between the down barb-vanes and the definitive barb-vanes. It would be instructive for some future investigator to explain and figure in detail the connection between the first and second definitive feathers.—
WALTER P. TAYLOR.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

MAY—The Southern Division of the Cooper Ornithological Club, met at Throop Polytechnic Institute, May 30, 1907. The first part of the evening was filled up with informal consideration of topics of interest, the meeting being called to order about nine o'clock, with President Morcom in the chair. Walter Taylor was selected as secretary *pro tempore*.

The name of Cyril H. Bretherton was proposed for membership by Mr. Grinnell for Mr. Law. Mr. Watson, who is about to leave for Denver, Colorado, handed in several names of possible members of the club.

As there was no more business to be considered the meeting adjourned, and for the rest of the evening general ornithology and projected summer outings were discussed.

Members Morcom, Howard, Chamberlain, Judson, Watson, Lamb, Taylor, Willett and Grinnell were present.

WALTER P. TAYLOR,
Secretary pro tem

AUGUST.—A specially called meeting of the Southern Division was held in the City Clerk's office, Los Angeles, August 30, 1907. President Morcom called the meeting to order at 8:30 P. M. with the following attendants: Dr. T. S. Palmer, J. H. Gaut, H. T. Clifton, O. W. Howard, G. Willett, G. F. Morcom, L. Chambers, Alphonse and Antonin Jay, C. E. Cosper, J. E. Law, J. Grinnell, H. J. Lelande.

The main interest of the evening was centered in the presence of Dr. T. S. Palmer, of the U. S. Department of Agriculture. Dr. Palmer spoke to the Club at length concerning the scope of work of the Bureau of Biological Survey, and especially of his own duties in connection with game preservation. He told very entertainingly of experiences in detecting illicit traffic in game, and of the institution and protection of National game refuges.

The matter was brought up of the establish-

ment of game preserves on our own coast. Several colonies of the Least Tern yet remain, and these deserve protection. It was thought that the readiest means would be thru efforts to induce private landowners to post and patrol their holdings.

Dr. Palmer was given a hearty vote of thanks for his cordial compliance with the invitation to talk to the Club, and the evening will long be remembered as one of the most enjoyable and profitable in the Club's history.

J. EUGENE LAW,
Secretary.

NOVEMBER.—The regular November meeting of the Southern Division was held in the offices of H. J. Lelande, City Hall, Los Angeles, Cal., Wednesday evening, Nov. 27, with members G. Frean Morcom, H. J. Lelande, Jos. Grinnell, H. T. Clifton, O. W. Howard, C. E. Cosper, Howard Wright, W. Chamberlain, Walter Taylor and J. E. Law present.

The minutes of the September meeting were read and approved, and Mr. Howard and Mr. Lelande, who were present at the October outing meeting, gave an oral report. They noted several additions to the list of Newhall, Cal., observations. This list will be published elsewhere. They also noted that the English Sparrow colony there is increasing.

Applications for membership were proposed: C. O. Esterly, Ph. D., and L. A. Test, Ph. D., both of Los Angeles, Cal., and both proposed by Prof. Loye Holmes Miller; and Robert B. Rockwell, 1322 E. 13th Ave., Denver, Colo., proposed by Joseph Grinnell. In accordance with the By-Laws, action on these was deferred till next meeting. On motion, duly carried, the secretary was instructed to cast the unanimous ballot of those present electing to active membership Cyril H. Bretherton and R. Magoon Barnes, the latter subject to the approval of the Club-at-large owing to his non-residence in the State.

Mr. Grinnell proposed a vote of thanks to Mr. Clifton, the retiring business manager of THE CONDOR, for the faithful service rendered the Cooper Club during the years he has handled its finances, and for his very efficient management of its business affairs, until now the Club, and with it THE CONDOR, is in a most thriving condition. The motion was heartily approved by all present.

This being the last regular meeting before the annual election, nominations for 1908 were called for resulting as follows: For President, G. Frean Morcom; Vice President, H. J. Lelande; Secretary, J. Eugene Law, Treasurer, W. Lee Chambers.

A paper by Mr. F. C. Willard, Tombstone, Arizona, on the bird life in the vicinity of Tombstone, was read by the secretary in the absence of the author. Mr. Willard records some interesting local notes, and finds bird life much localized, particularly about a few cottonwoods and other trees on the edge of the city. In this little clump no less than 28 pairs of birds representing ten species raised their broods in 1907. Adjourned.

J. EUGENE LAW,
Secretary.

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GINN & COMPANY, Publishers

Boston New York Chicago London

THE CONDOR

A Magazine of Western
Ornithology



Volume X

March-April, 1908

Number 2



W.K.F.

COOPER ORNITHOLOGICAL CLUB

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Entered as second-class matter February, 1908, at the post office at Los Angeles (Hollywood Station), California, under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, First National Bank Building, Hollywood, Cal.

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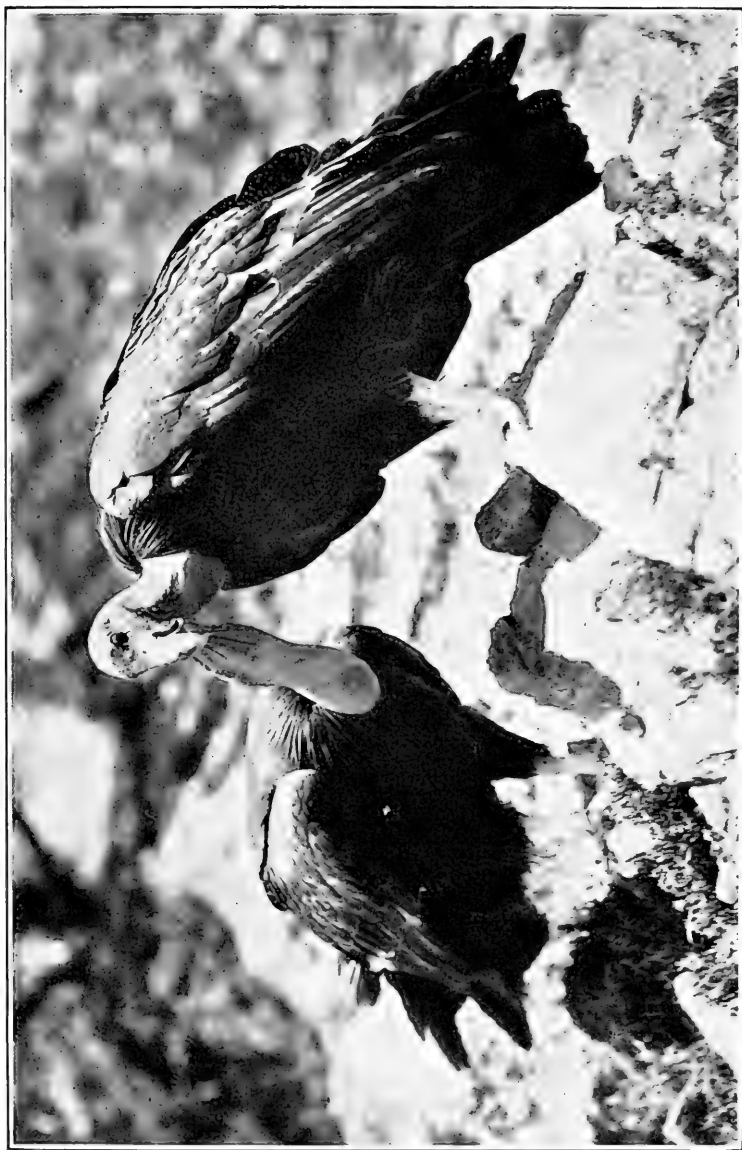
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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume X

March-April 1908

Number 2

LIFE HISTORY OF THE CALIFORNIA CONDOR PART III.—HOME LIFE OF THE CONDORS

By WILLIAM L. FINLEY

WITH PHOTOGRAPHS BY HERMAN T. BOHLMAN AND THE AUTHOR

I N the issue of THE CONDOR for November, 1906, I gave an account of finding the nest and egg of a California Condor (*Gymnogyps californianus*) in the mountains of southern California, which was accomplished thru the help of Mr. Joseph Grinnell and Mr. Walter P. Taylor. In the last issue, January, 1908, I dealt with the historical data and range of the California Condor. Most of the material used was supplied me thru the kindness of Mr. W. Lee Chambers, who has spent years in collecting this data. In the present paper I shall continue the observations Mr. Bohlman and I made at the condor's nest, and tell something of the home life of these birds.

From what we knew of the nesting habits of the California Condor, we could not tell whether the old birds would be shy and hard to photograph, or whether they would show fight while we were working at their home.

On April 11, 1906, we made another trip to the condor's cave. While ascending the steep slope to the nest, a large boulder was accidentally loosened and narrowly missed taking the camera man along as it dropped into the canyon with a loud report. The next moment, the old condor, aroused from her nest, flapped to her perch in the dead tree directly over our heads. We watched and waited, hoping she would return to the nest. But after about fifteen minutes, she raised her wings, hooked her bill about the stump, parrot fashion, and climbed to a higher perch. We crawled on up behind a cover of rocks to get a picture. While fixing the camera, I looked up and the old male was just alighting beside his mate on the dead tree. We crouched down to watch. If the birds saw us, they paid no attention to our presence. The mother edged along the limb and put her head under his neck. Then she nosed him as if asking to be fed, but he responded rather coldly by moving away and she followed. This crowded him out where the limb was

too small, and he jumped across back of her. He seemed to get more friendly and the two sat there side by side, nibbling and caressing each other.

We began crawling further up the ridge for a nearer picture. When we came in full sight of the birds, to my surprise they paid no attention to us. We stopped to take another picture and then climbed on up the steep rock with our cameras on our backs. Under cover of a small bush, I came to a point directly opposite the pair and only about forty feet away. Seeing the condors had no fear of me, I climbed straight out to the edge of the ledge and made some exposures while the mother sat preening her feathers. As neither bird seemed the least anxious as to our presence, I began to enjoy the sensation of getting so close to these big birds in their wild mountain haunt.

In a few minutes, the old male spread his wings and dropped off down the canyon. The next time I saw him, he was a mere speck, soaring high above the mountain. The mother kept turning her head and watching him all the while he was in the sky. Finally she too sailed off.

When we climbed around to the nest, we found the condor nestling had grown from the size of the egg, or from about a double handful, till he filled my hat. The



WITH FEATHERS RUFFLED UP AROUND
HIS EARS

down on his body had changed color from a pure white to a light gray. Instead of the flesh color on his head and neck, it had changed to a dull yellow. He sat with his shoulders humped and his head hung as if in the last stage of dejection. The minute he saw me, he began crying in a note most peculiar for a bird, for it sounded exactly like the hoarse tooting of a small tin horn. However, he only used this note a few times; then he began hissing. He showed his resentment by drawing in his breath and letting it escape as if thru his nose. His feet were short and stubby, the feet of a scavenger. What a deterioration from the eagle! The claws were

like those of a chicken rather than a bird of prey. The head, the bill and even the look in the eye were very different from the savage expression of the eagle even in his babyhood.

When we picked the youngster up in our hands, he objected in a feeble way by trying to bite. Both the parents had left the vicinity, and we set him down at the entrance of his home to get some pictures. One of the parents was soaring high in the air, and he seemed to see his chick, for he began to descend rapidly. It looked as if he had something in his talons, but when he came nearer, we could see his legs and feet were hanging down as birds often do when about to alight. He seemed to do this as an aid in dropping suddenly. He swept in near us and lit on the old dead pine and was soon followed by his mate. The old birds looked so serious as they sat there staring at us and their young, that we hesitated, for we were not in a position for trouble there on the steep side of the mountain. But they had no intention of stopping us in our work, for they seemed to take the whole enterprise from the point of view of curiosity.

There was something ominous about the condors and their nest cave. Never a sound came from the birds: they came and went like great black shadows. One

minute you might see a mere speck in the clouds, and a few moments later this creature with a wing-spread of ten feet, would skim past only a few yards above your head. There was hardly a swish of the wings to tell of his presence.

April 25th, the next trip we made to the home of the condor, the pair of old birds met us at the mouth of the canyon. One of the birds sailed out over the top of the mountain, quite high in the sky. In a moment the second bird followed lower down. They were perhaps out for a short morning fly after attending to affairs at home. The lower bird, likely the female, soon flew back up the canyon, while the other sailed straight out over the valley toward the east.

Four hours later, I edged down the steep rock as quietly as possible with my reflex camera in hand and worked my way along to the nest. When I got where I could look thru the crack into the cave, there sat the old condor mother sound asleep. She was brooding her nestling. I dropped back behind a bush and got my camera ready. It was too dark to catch her as she left, but I thought she might pause at the threshold and give me a chance for a picture. Then with my camera ready to snap, I gave a short whistle to arouse her. Then moving a little closer, I gave a louder whistle. In an instant she knew I was there, for she plunged headlong out from behind the rock and lit scared and half dazed on her perch a short distance away.

When we stooped to look at the nestling in the cave, he jumped right out at us. He was in a savage mood. If his mother would not stay to defend him, he intended to fight for himself. I could see that he was developing good fighting qualities. His mother might have showed fight too, if she were cornered as he was.

The young condor was growing steadily, for he was now thirty-five days old and as large as a good-sized chicken. His whole body was covered with dark gray down with the outer edgings of lighter gray. When I put down my elbow, he lunged forward and struck it such a hard blow with his bill that it would have drawn blood had he hit my bare hand. The minute I appeared, his neck puffed out with wind and his whole crop filled till it felt just like a rubber ball. He seemed to use his crop as a supply tank for air, which he blew out slowly thru his nose to express his anger. He sat with his head down and mouth open. The front part of his tongue was round and it folded over from each side and met in a little crease down the front. About an inch back, it looked as if it were partly cut in two, for it was narrower and flatter. Such a breath as that youngster had! I could not describe it, and I tried to forget it as soon as possible.

That evening we watched the old condor to see if she would go back to the nest. But at six o'clock she settled down on her perch with her head drawn in, and went to sleep. The young condor had to sleep alone.



ONE CONDOR BECAME TOO AMOROUS AND CROWDED
THE OTHER OFF THE PERCH

We awoke at daylight in the morning with a cold draft drawing down the canyon. The old condor was still sound asleep on the dead tree up the mountain side. At six-twenty, she sailed across over our heads and lit on the side of the cliff. She was there but a moment when she spread her wings and dropped back across to the nest where she stayed an hour, after which she took up her perch on the tree.

We examined both the old birds from a near point of view and found they were almost identical. We were not positive, but took it for granted that it was the mother that staid at the nest. The other bird, likely the male, seemed to be a trifle larger. At this season as well as during the period of incubation, the female seemed to stay on the nest or nearby, while the male did all the hunting.

We had seen nothing of the male since the morning before about ten o'clock, when he disappeared high to the east. As the mother sat there on her perch, she



BOHLMAN PETTING THE YOUNG CONDOR, WHILE THE PARENT SHOWS CURIOSITY
AND ANXIETY

often turned her head and scanned the heavens, looking for the coming of her mate. By watching her, our attention was first called to a mere speck in the sky. It grew with surprising rapidity, and as it took better form, we could see a bird coming toward us with extreme speed. Thru the field-glass, we could see that the feet were dropped, and we knew it was the male condor, for this was the way he always came. With one great slide to the west, and a long swerve to the north, he circled with the curve of the canyon and brought up on the top of the dead pine only thirty feet away. I never saw such a slide as that bird took. Such smoothness and grace! And such tremendous speed!

Each day at the nest we seemed to be getting on more intimate terms with the old birds. The minute we lifted the young condor from behind the rocks, the old birds were very much interested. They both came over to a nearer perch where they could see, and they twisted their necks to watch every move we made. When

the mother saw her gray nestling, she flew across to the rocks above us. Then she ran along the steep slope, but had to help herself with her wings to keep her feet, and hopped up on a small oak limb just above the nest and only twenty feet distant. The old male followed and both sat watching us from the tree. It was all anxiety with them, and we were so anxious to get their pictures that we could not shoot fast enough. In a short time, all our plates were gone and we had to sit down and watch, and wish for more.

This gave us the best chances to study both the old birds. Their bills were of dark horn color and the red skin of the head extended down covering the bill about half way. The feet were of similar color, but on each knee was a patch of red. There was a brighter patch of red on the breast of each bird, which could occasionally be seen when they were preening and when they spread their breast feathers. Both had light-colored wing-bars and the primaries were well worn. The skin on the throat hung loose and the lower mandible fitted in close under the upper, giving the bird a peculiar expression. The chin was orange and below this on the neck was a strip of greenish-yellow merging into brighter orange on the sides and back



LEAVING THE OLD STUB

of the neck. The top and front of the head were bright red, but between the eyes was a small patch of black feathers, and these extended down in front of the eye till they faded into the orange red of the neck. The pupil of the eye was black, but the iris was deep red and conspicuous. The top of the head was wrinkled as if with age. The ruff, or long shiny black feathers about the neck, was often ruffled up, giving the bird a savage appearance. Behind the ruff on the back the feathers were edged with dark brown.

When we made the next trip into the mountains, to our surprise a third condor appeared above the nest in the afternoon. He was a ragged looking bird, with two or three feathers out of his wings and one missing from his tail. We first noticed the new bird as we saw the parents watching him intently when he was high in the sky. He began circling nearer and nearer till he finally lit on the side of the mountain a few hundred yards up the canyon. The parents watched him closely for some time without a move, till the new arrival, thinking his presence was not objectionable, flew down and lit nearer the nest. The male set out after him and the third condor flew back up the canyon. There was some objection to the new

comer, but it was not serious, for he stayed about all the afternoon, and at one time lit for a moment on the dead tree near the nest. The male drove him off, but only chased him a short distance.

The third condor seemed a trifle smaller than the other two, but he was almost as brightly colored as the parents. We were inclined to think he was one of the children of former years. We watched the three birds till six o'clock and then climbed down to make camp. The parents were perched on the dead tree in front of the nest, and the third bird on the mountain side above, and there they went to sleep for the night.

Early the next morning we found one of the birds, presumably the male, and the intruder gone, while the other still sat on the tree-perch. About noon the father appeared in the eastern sky. The mother saw him first and we were attracted by her watching. We were surprised again to see the third bird following a little in



PERCHED IN AN OAK ABOVE THE NEST: ALTHO THE BIRDS WERE BIG AND HEAVY THEY PERCHED READILY IN A TREE AND CLIMBED FROM LIMB TO LIMB, OFTEN USING THE HOOKED BILL TO HELP THEM

the rear, and he came on down and stayed during the afternoon. The crops of both birds were bulging out when they returned, showing that they knew where to get food.

The young condor was now fifty-four days old, but he was still clothed in gray down. It was over two months before the first black feathers began to show on his wings, and they developed very slowly; for by the first week in July when we had expected to complete our series, the young bird was not half feathered out, altho he was three months and a half old and weighed over fifteen pounds.

We could see that the parents were becoming more and more attached to the nestling, and they were becoming tamer and tamer while we were about. The nestling was wilder and more ferocious as he grew. The only way we could touch him was by wearing heavy gloves or by blindfolding him. He lunged about and fought while he was in the cave; but when we got him out of his home, he

seemed to change tactics and to become quite meek. While we were getting pictures of him, the parents sat about only a few feet away. They were almost devoid of fear, for several times they stood within five or six feet of us in perfect unconcern. Of course, we had been extremely careful from the first not to scare them and not to make any quick movements while they were so near. In all our study of the home life of these birds, there was never the slightest indication of ferocity on the part of the parents. Their attitude was one of anxiety and solicitation.

The last afternoon when we took the young condor out of his cave and he appeared blindfolded, the mother jumped back as if scared, for she could hardly recognize him without a head. We placed him on a narrow ledge of rock, removed the blind and the mother edged down to her young. Then she began caressing him, pushing her head under his wing and biting him gently on the leg. I never saw a greater show of affection in any bird than the two condors seemed to have for each other and for their young. The longer we studied and the more we watched this family, the stronger our own attachment became for the birds.

While we were taking our final pictures of the condor family, two more condors appeared high above. With a field-glass, we recognized one as the former visitor, the ragged bird with missing feathers in the wing and tail. The two new arrivals sailed about in circles for a while and then we saw the ragged bird descending. The father of the young condor seemed to get more anxious and flapped across the canyon and back. On came the visitor till he was only a short distance above the top of the mountain. Then the father sailed rapidly down the canyon and around the bend out of sight. The third bird dropped lower and lower in circles while his mate stayed higher up in the sky. The father of the young bird was gone about five minutes, when he suddenly appeared right over the top of the mountain and higher than the visitor. He had made a feint and got the advantage of position. Drawing his wings partly in, he dove at the intruder who saw him coming and increased his speed down the canyon. Dodging the enraged condor, he circled back up a small side ravine and both disappeared behind the mountain. In a few minutes, they came into view again higher in the air and going toward the west, the old condor flapping wildly to strike a blow and the pursued one dodging back and forth to escape. They were undoubtedly two males, for the mother sat calmly looking at the chase, while the mate of the ragged bird sailed about watching the outcome. After another wait of several minutes, the two birds appeared again, but far up in the sky; the ragged bird was flying straight to the east, still dodging the mad condor at his tail. And on they went as far as I could see, with the mate of the ragged bird following some distance in the rear. In about half an hour, the father again appeared, sailing slowly back alone, victorious in the chase.

Portland, Oregon.

SPRING NOTES FROM SANTA CATALINA ISLAND

By CHARLES H. RICHARDSON, JR.

SANTA Catalina Island lies about twenty-five miles off the coast of Los Angeles County, California. It is an exposed portion of a mountain range, of which the other islands of the Santa Barbara Group are a part, and is twenty-three miles long with a maximum width of eight miles. The surface of the Island is broken by many canyons, some short with steep, almost precipitous

sides, others reaching far into the interior of the Island. Their lower courses widen out into sandy washes.

Vegetation is heaviest on the shady north slope of the hills, and in the canyons containing water. In the latter localities, cottonwood trees (*Populus trichocarpa*) attain a good height, and here are also found groves of wild cherry trees (*Cerasus lyoni*), and a species of scrub oak. The hillsides are covered with a number of different kinds of brush, prominent among them being the scrub oak and a sumac.

These notes are the result of two brief sojourns on Santa Catalina Island in the month of April, eight days being spent in 1905, and five in 1906. Fortunately both trips were made after wet seasons; the hills were carpeted with grass, flowers and insects were abundant.

As practically all the time was given to the study of the land birds, only these will be mentioned in the annotations to follow.

One accustomed to a large and varied avifauna is at once impressed by the scarcity of species on Santa Catalina Island. As one stops to rest in the canyons, or looks out on the blue Pacific from a hill top, scarcely a sound is heard. To be sure, one occasionally catches the song of a Mockingbird, the hoarse croak of a Raven, or the faint note of a Warbler; but there is no ringing medley of bird voices so often heard upon the mainland.

Lophortyx catalinensis. Catalina Island Quail. Abundant both seasons. A half-completed nest was found on a narrow ridge that overlooked the ocean. It resembled the nests of the mainland species, being built of dried grass in a hollow flush with the surface.

Zenaidura carolinensis. Mourning Dove. Seen about springs where they came to drink. The birds were paired at the time of my visits. An old nest was found, proving the species to be resident.

Accipiter velox. Sharp-shinned Hawk. On April 19, 1905, an individual of this hawk was flushed from a thicket of scrub oak. This was the only one seen.

Buteo borealis calurus. Western Red-tail. Common about the hillsides, especially where ground squirrels are abundant.

Haliaeetus leucocephalus. Bald Eagle. A number of bald eagles were seen circling about the cliffs.

Colaptes cafer collaris. Red-shafted Flicker. Flickers were seen but twice. They are probably only winter visitors to the Island, as a diligent search in suitable places failed to reveal a single nesting hole.

Phalaenoptilus nuttalli californicus. Dusky Poor-will. Occasionally seen at dusk in the wash back of Avalon. Altho no specimens were taken, the birds seen were probably referable to this form.

Aeronautes melanoleucus. White-throated Swift. White-throated Swifts were often seen flying over a grassy ridge back of Avalon. After wasting much ammunition, a beautiful female specimen was secured.

Calypte anna. Anna Hummingbird. A few Anna Hummingbirds were seen, but they were not nearly so plentiful as *Selasphorus alleni*.

Selasphorus alleni. Allen Hummingbird. An abundant resident at the time of both my visits; the breeding season was well advanced, many nests being found which contained large young. The nests were nearly always built in oaks or cottonwoods in narrow canyons where there was water. Only once did I find this rule violated, in this instance the bird building its nest in a sumac which grew in a sandy wash.

The basis of the nest was, with a few exceptions, sheep's wool. This was

fastened to the twig by the aid of spider-web, the same substance being used to adhere green moss to the outside. Occasionally vegetable down was used in the lining. The dimensions of two nests are as follows:

I. Outside—Diameter, 59 mm., depth, 37 mm. Inside—Diameter, 35 mm., depth, 15 mm. II. Outside—Diameter, 47 mm., depth, 35 mm. Inside—Diameter, 27 mm., depth, 15 mm.

The males resorted to the wild tobacco bushes (*Nicotiana glauca*) which grew abundantly in the washes. They were very pugnacious little fellows, constantly fighting and chasing one another about.

Sayornis nigricans. Black Phoebe. A single individual was heard on the morning of April 18, 1906. This was the only one noted.

Empidonax difficilis. Western Flycatcher. One of the most abundant birds on the Island. Found wherever there is shrubbery, from the shore to the highest ridges. The birds were in pairs and the breeding season was apparently just beginning, one partly completed nest being found.

Some time was spent in watching the owners of this nest. One of the birds would work on the nest, while the other, presumably the male, would place itself in an exposed position to ward off intruders. Evidently it classed all birds as intruders, for an innocent Dusky Warbler, which happened to alight in the tree, was instantly driven off, leaving behind a goodly number of feathers.

The inadvisability of retaining the name "*insulicola*" for the *Empidonax* from the Santa Barbara Islands has been discussed in previous numbers of THE CONDOR¹ and will not be reiterated here.

Corvus corax sinuatus. Mexican Raven. Very common. Most any time several could be seen flying about, and uttering a peculiar clicking note.

On April 19, 1905, a nest containing six eggs was found. It was built in a wild cherry tree fifteen feet from the ground, and was made of good-sized sticks, lined with black and white sheep's wool. Incubation was fresh in every egg but one, that being slightly addled.

Icterus cucullatus nelsoni. Arizona Hooded Oriole. Heard once on April 16, 1906. Probably more common later, as I have observed them a number of times in the summer.

Carpodacus mexicanus clementis. San Clemente Linnet. Abundant in the eucalyptus trees about Avalon and in the cactus patches farther inland where they were nesting. Many partially finished nests and incomplete sets were noted, indicating that the breeding season had just begun. The nest is built on a branch of cactus usually well in toward the center of the patch, and is composed outwardly of weeds and like substances, lined with grass and sheep's wool. A set of four eggs taken are essentially like those of the mainland form.

Astragalinus psaltria hesperophilus. Green-backed Goldfinch. Observed several times in the weed patches on the hillsides.

Astragalinus lawrencei. Lawrence Goldfinch. Lawrence Goldfinches were seen several times flying overhead, uttering their characteristic metallic notes the while, but were not as common as the Green-backed.

Zonotrichia leucophrys gambeli. Intermediate Sparrow. Quite common in the washes. As they are known to be an abundant winter visitant² probably the bulk of them had gone north before my arrival.

Zonotrichia coronata. Golden-crowned Sparrow. Seen on several occasions in 1906 but not detected in 1905. They frequented the washes in company with the previously named species.

¹ See CONDOR Vol. VII, No. 2, pp. 51-52; and CONDOR Vol. VIII, No. 3, p. 74.

² See Auk Vol. XV, No. 3, p. 235.

Spizella socialis arizonæ. Western Chipping Sparrow. Abundant everywhere and in full song. One was seen carrying nesting material, and old nests were found, which shows that they are summer residents.

Passerella iliaca insularis(?) A Fox Sparrow was noted on April 21, 1905. It was feeding on the ground beneath a clump of bushes, and at intervals uttered a low warbling song, similar to the song of the Green-backed Goldfinch, but sweeter. It probably belonged to the form *insularis*.

Pipilo maculatus clementæ. San Clemente Towhee. Very abundant especially in the washes. Nine specimens, six males and three females were secured. Compared with specimens of *Pipilo maculatus megalonyx* in my collection, they have larger bills and are grayer dorsally, this latter condition being especially prominent in the females.

Cyanospiza amœna. Lazuli Bunting. Seen occasionally in the canyons where water was present, but not very common.

Lanius sp? About half a dozen shrikes were seen on the golf links back of Avalon. In 1905 three fully fledged juveniles being fed by their parents, were noted. The status of the Catalina shrike has not been determined.

Helminthophila celata sordida. Dusky Warbler. Dusky Warblers were very common in the canyons and in the scrub oaks on the hillsides, where they were nesting. The hight of the breeding season must be the last of March, for many fully fledged juveniles and nestlings were seen by the middle of April. They were nesting in small scattered colonies, the nests usually being placed in scrub oaks from fifteen to twenty feet from the ground. Some nests however were built in sumacs, and one was found in vines overhanging a gorge. They were quite bulky affairs, made of leaves, small twigs, grass and bark, lined with fine grass or sheep's wool. Dimensions of two nests are as follows:

I. Diameter—Outside, 3.50 inches; inside, 1.50 inches. Depth—Outside, 5.00 inches; inside, 2.25 inches.

II. Diameter—Outside, 3.75 inches; inside, 2.00 inches. Depth—Outside, 3.00 inches; inside, 1.50 inches.

Several clutches of four eggs were noted, besides quite a number of incomplete sets. The ground color of the eggs is ivory white, dotted and finely blotched with burnt sienna and pale lilac.

The female is a very close sitter, almost allowing herself to be removed by the hand, and when driven from the nest feigns a broken wing, falling lightly to the ground, only to return and repeat the process, or utter scolding notes resembling "chit-chit."

The male bird was always present with the female when the nest was being examined, but did not express so much anxiety as his mate. When the female was sitting he would hop about in the nearby trees, uttering at intervals his beautiful warbling song, "ti-ti-ti-ti-ti-ti-ti-ch-ch-ch," beginning quite slowly and gradually gaining in rapidity. This, I must say, is a poor rendition of the song, as there is a certain metallic ring to it, which cannot be expressed in words.

Dendroica auduboni. Audubon Warbler. Quite numerous in the washes.

Mimus polyglottos leucopterus. Western Mockingbird. Abundant everywhere and in full song. I was very much surprised to hear this bird give a perfect imitation of the cry of the Western Gull.

Thryomanes bewicki charienturus. San Diego Wren. Abundant in the washes where many juveniles were observed, indicating that the breeding season is early in March.

Hylocichla guttata nana. Dwarf Hermit Thrush. A very few individuals of this species were seen in the brush tangles in the canyons. One was heard singing its exquisite song.

Pasadena, California.

NOTES ON THE RHEA OR SOUTH AMERICAN OSTRICH

By SAMUEL ADAMS

THE market place of a South American city abounds with interest for the traveller. Here under one roof are piled in profusion the varied fruits and vegetables, meats, fish and game of the locality, and they are sure to interest the newcomer, appealing either to his tastes or his curiosity. I was especially anxious for some reason or other to taste a rhea's egg after seeing one in the market, and when I did I made a meal of it and regretted what I had done for several hours after. The flesh of the rhea like its eggs is very rich and gamy, and with a novice a little goes a long way.

There are two species of Rhea. The larger, *Rhea americana*, ranges from Southern Brazil and Paraguay southward thru Uruguay and northern Argentina into Patagonia, southern Argentina, as far south as the Rio Negro. *Rhea darwini*, the smaller of the two, is a Patagonian bird, overlapping the range of the other on the south and extending as far as the Straits of Magellan. In their habits the



SOME RHEAS FEEDING ON ONE OF THE FARMS; A SHEEP GRAZING NEAR TWO OF THEM

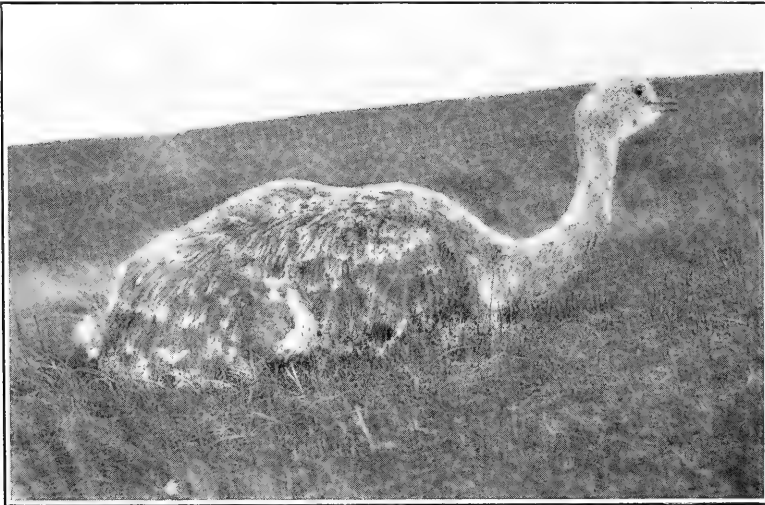
two birds are said to be practically alike, and their appearance does not differ greatly. The general color is a dark grey, the tips of the back feathers and the quills being white. I have seen a rhea in a menagerie, the back and wings of which were a solid white. Whether this bird was a freak or another species, I am not prepared to say as I have never seen it described. At a distance the dusky cast of the southern bird blends with the Patagonian landscape and makes its detection at times almost impossible. The males of both species are slightly darker than the females, but it takes an experienced eye to tell them apart at a distance. The plumes of the rhea are adapted to some uses in millinery but they are very filmy and in no way compare with those of the African ostrich. They are chiefly used to make dusters and bed fillers. The rhea stands about three feet in height at the back and his foot-and-a-half neck brings his eyes some fifty inches from the ground.

In so desolate a region as Patagonia one might wonder what the rhea finds to eat the year around; doubtless many do starve in southern Patagonia during the severe winters when there is sufficient snow to keep them from the grass. In the summer months there are plenty of big black beetles and green grass and plants to keep them fat, and with the exception of Patagonia their range affords all the sustenance that is required at any season of the year. The rhea is a constant feeder in

the summer time in Patagonia and in the fall is fat and well prepared to weather the usually moderate winter that prevails there.

The family life of the rhea is not, like that of many birds, an open book to all who care to observe them. Their natural shyness and the barrenness of the country in which they live afford but few advantages for observation. The comparison of many notes made at various times by numerous careful observers has given us our most reliable data. This snatching little pieces here and there and putting them together has built up a life-history of the largest of living American birds. The tales of the gauchos in regard to the rhea as well as other animals, while entertaining and true in many details, border on the fanciful yarns of the dreaded nature fakirs and they never hesitate to supply essential points if their own experience has not covered the gaps!

The rhea is said to be a polygamous bird, and the male incubates the eggs of several females, the process requiring six weeks. The females also lay many eggs in the camp or prairie to go unincubated. Whether she deposits eggs in more than



A WOUNDED *Rhea darwini*

one nest is not known, tho it seems possible, for they wander over much ground. The hens are not rapid layers. A bird in captivity is known to have dropped one egg every three days for a period of seven weeks. The size too of the clutch varies widely; as few as a dozen and as many as half a gross have been found in a single nest. In these larger nests the difference in the ages of the eggs is very noticeable. The fresh eggs have a beautiful greenish tinge which fades rapidly during incubation or exposure on the pampa. It is claimed by some observers that the females assist the males in the incubation, but it seems that this is only for a small part of the time. The size of the nest may depend largely on the number of the females, but the diameter of the nest is almost a constant factor, the variation being in the depth, for eggs are sometimes found as much as a foot or more below the upper layer buried in debris and dirt. A gaucho told me that these eggs were buried so that the old birds could break them on the ground when the young were hatched to draw flies for their first food. I think it was just the result of overcrowding, and not necessarily premeditated.

The young bird is quick to grasp the spirit of his wild existence and leaves the nest when scarcely dry. When left alone they feed together in a flock, eagerly running after insects, and picking at everything that looks green and tempting. His free life makes him jealous of his liberty and it is difficult to capture a young bird. Once caught, however, they are easily tamed, and except for their fondness for houseplants and garden truck they would make a handsome fowl about the farm.

On the open pampa the rhea is a very shy bird, making off at the first approach of danger. If a choice of direction permits he chooses the wind and runs against it with wings outstretched when greatly alarmed. A horse is no match whatever in speed or endurance on a fresh start, and the native hunter aims to exhaust the bird with dogs, and then approach closely enough, if necessary with a final dash to ensnare him with the bolas. The farmers on some of the ranches forbid the molestation of the rheas by the peons or their dogs, and thus afford in season an abundance of fresh eggs close at hand. These birds, accustomed to the sight of man, gave me a chance to photograph them at rather close range, but the lack of contrast in their outline and that of their background makes the picture quite unsatisfactory.

The rhea hunter of the pampa is a picturesque character and a typical nomad. A few well-seasoned horses and a troupe of half a dozen dogs with long legs and plenty of endurance form the chief part of his outfit. A recado or blanket saddle furnishes at once a seat and a bed; a small kettle to boil water for his maté or native tea, with its drinking outfit is the extent of his culinary equipment, and matches, tobacco, a knife and the bolas complete the outfit. He lives on roasted meat and maté. The hunter follows the game over the open pampa or along the water sheds tributary to the lakes or rivers and unless it takes to the water it is almost invariably captured due to the relentless pursuit, since time plays no part. The rhea is a strong swimmer and has been seen to voluntarily cross a river for the sake of better feeding grounds. The task is evidently not greatly distasteful to him.



NEST OF *Rhea darwini* WITH 42 EGGS

The method of cooking the rhea and its eggs invented by the indians is ingenious and effective; the idea of simplicity has been generally adopted by the peons, in Argentina at least, to the cooking of meats in general. The flesh on the carcass of the rhea is tender and delicious while the leg meat is as tough as sole leather, and is not eaten unless food is scarce. The indians after removing the viscera thru a small opening in the abdomen fill the cavity with hot stones about the size of tennis balls and leave the bird to roast with the skin on. The eggs when not eaten raw are prepared by roasting in the hot ashes, after breaking the shell at one end so the contents may have room to expand and be stirred. Piles of the smooth stones used in the cooking process are found about the old camping grounds on the pampa and testify to the antiquity of the custom. The skins of the rhea are frequently used by the indians for bed mats, and they have devised a tobacco pouch out of the neck skin which they peel from the shoulders toward the head without making a longitudinal opening. By stretching and drying this and putting in a few stitches in the bottom they have a very serviceable pouch.

Topeka, Kansas.

OBSERVATIONS ON THE NESTING HABITS OF THE PHAINOPEPLA

By HARRIET WILLIAMS MYERS

PHOTOGRAPHS BY LAWRENCE MACOMBER

ON May 19th, 1907, I came upon a Phainopepla's nest built on a horizontal crotch of a large pepper tree some fifteen feet from the ground. The placing of the nest in a horizontal crotch differed from any nest that I have ever seen built by these birds, the others being in upright crotches. The limbs selected to hold the nest were large and some distance apart. The nest itself differed not from other nests of this species. It was gray in color and shallow, saucer-shaped in form. From so far away I could not examine its material but it looked fine.

At 1:47 P. M. the female came to the nest with material in her mouth. This she deposited and left. At 1:55 the male came into the tree but seeing me flew out again with much twitching of the tail and calling. In ten minutes he returned, darted out again, immediately returned and took the nest. For twenty-five minutes he brooded, then left, returning in four minutes. For ten minutes more he sat quietly, then suddenly left the tree giving his harsh "scrat" call and twitching his tail. Presently I heard him singing in a nearby tree. At 2:55, just an hour from the time he had taken the tree, he drove another Phainopepla away. At about the same time the female came to a neighboring tree, and the male flew away. It seemed evident that this pair, like all the other Phainopeplas that I have watched nesting, always guarded the tree. One left, only, when his, or her, mate was near by.

The next morning when I visited the nest shortly after ten o'clock the male was brooding. At 10:16 he took a turn in the air and returned. His actions plainly showed that my presence disturbed him. There was no place where I could see the nest and be entirely obscured. In his shyness he differed from the male I had watched in the pepper tree the year before. This male was quite fearless, the female being the shy one. I found in my watching at this nest that the female was much less shy than her mate.

In the afternoon of this same day when I visited the nest at 4:30 I found the male there. I began to wonder if he were to do all the brooding. At 4:56 the female came and took the nest, the first time I had seen her do so.

On the 26th of the month, seven days after brooding had commenced, I saw the female bring a long piece of stringy gray material and place it in the nest. Later when I learned that Mrs. Olive Thorne Miller had hung southern moss out in her yard near by, I made up my mind that that was what the bird had. In one nest that I watched last year the birds added material after brooding was well commenced. Seemingly this is a custom of these birds.

I find in my note book for May 29th, ten days after I first discovered the nest, the following record:

3:23 P. M., female on nest, did not fly when I came; 3:30, female left nest; 3:34, male took nest, is very shy; 4:02, male left nest, gave call; 4:03, male came back; 4:30, female flew over tree and male left; 4:31, male came back, then left again; 4:33, male took nest; 4:48, female catching insects nearby; male left nest with low call; 4:50, female took nest.

When the male was not brooding he spent much time in singing. It was not

always the low song that the male so often sings, but generally it was loud enough for me to plainly hear it at my home across the street.

On the morning of June 4th, when I visited the nest the female was brooding, the male nowhere in sight. This morning the female was unusually shy. She moved about in the nest giving her call note with much twitching of the tail and bobbing of her head. It was sixteen days since I first found the male on the nest, but tho I had been watching the birds closely of late, I had seen no evidence of young. At four P. M. I found the female on the nest. At 4:53 she left the nest and with the mate was about in the tree. In a few minutes the male flew away and the female went to catching insects near the tree. At just five o'clock she came to the nest and fed once. For a moment she stood on the edge of the nest, then slipped onto it without feeding again, tho she had swallowed once or twice and her throat had swelled as tho she were going to do so. At 5:12 the male came to the tree and the female left. In his mouth he carried a round, dark substance which I believe was a nightshade berry. As he reached the nest I saw this disappear into his throat, come up into his bill, disappear and come up again. This was repeated four times, when it was fed to something in the nest in one feeding. Then the male took the nest.



FEMALE PARENT AND YOUNG OF
PHAINOPEPLA

In half an hour the female came into the tree. She was met by her mate who drove her away. He twitched and called, and acted so distressed that I went back out of sight when he allowed his mate to come back, feed, and take the nest. In five minutes the male came to the nest and the female left. This time the male fed several times, then for one minute sat and just looked at the young before taking the nest. At 5:46 he left the tree; at 5:47 the female came but was driven away by her mate who went to the nest twice and looked at the young. At 5:50 the male took the nest. At six o'clock when I left he was still there.

The next day I watched at the nest one hour and nineteen minutes commencing at 9:07 o'clock. During that time the male fed twice and the female three times, the longest interval being twenty-two minutes, the shortest four. The manner of feeding the young seemed not to change from the beginning until they left the nest. As near as I could tell, berries and tiny insects formed the chief part of the diet. When the birds fed pepper berries, or nightshade, the berries were taken from the mouth down into the neck, and back several times before feeding. In the case of the insects they seemed to be carried in the throat, extending down into the neck, from which they were brought up by a sort of pumping motion, not violent, however, like the finches.

Three days after feeding commenced, at 2:30, I found the young alone. In nine minutes both birds came and fed several times, and the female took the nest. In the two hours and twenty minutes that I watched this day the old birds each fed twice, the longest interval being forty minutes, the shortest eleven.

On June 15th, eleven days after I first was sure that there were young in the nest, for the first time I caught a glimpse of them. Two gray heads, from which stuck up stiff bristling feathers that would some day be crests, were visible above

the rim of the shallow nest. Their eyes were dark and their mouths a dull yellow. When the old birds brought food the young set up a harsh, hoarse call; a sort of "scrat," as if something grated.

On the afternoon of this same day the male *Phainopepla* came into a tree near the nest, carrying a white substance about the size of a bean. What it was I could not tell. The female saw him and flew into his tree. Her mate bristled up and as she made a dive at him in an effort to get the morsel he carried, he evaded her and left the tree; nor did he bring it to the nest while I watched.

When the young were twelve days old, I first saw them beg for food. On this day, also, they were seen to preen their feathers. Two days later they sat well up in the nest. Their crests were well started being, perhaps, one third their natural height. As one of them preened his feathers his wing was outstretched and a light patch was plainly visible on it. The youngsters were, for the most part, quiet, dignified little fellows, but they opened orange lined mouths and begged with a harsh purring noise when the old ones were about.

My record for June 18th, reads: 9:30, young alone; 9:45, female fed several times, and left; 10:05, female fed; 10:15, female fed each bird two or three times, bringing food from the throat as at first. Male singing near by; young roused up, twitched short tails, and cried "scrat." 10:25, male fed each bird several times what looked like nightshade; 10:25, female came to nest but did not feed tho young begged; 10:50, female fed; 10:58, male fed.



NEST OF PHAINOPEPLA ON SYCAMORE BOUGH

Not until nineteen days after I had seen the old birds feed them did the young leave the nest. At eleven A. M., June 23d, while I watched at the nest, one young bird hopped out onto the limb about a foot from the nest, paused a moment, then flew about four feet higher up. In less than a minute the other bird followed his mate up into the tree, both birds keeping up the harsh call. At 11:15 the female came to the empty nest, paused there a moment, then flew up to one of the birds and fed it. Her mate fed the other one in two minutes. In color the young birds resembled their mother; in size they were more like a cedar waxwing. Their eyes were dark, not red like the adults.

Shortly after seven o'clock that night I went over to the pepper tree thinking I would see if they were anywhere about. To my astonishment I found them back in the nest. In the short time in which I watched them that night the male came and fed them twice.

The next morning at 7:15 I was at the tree. One young bird was still in the nest, the other was about five feet higher up in the tree. While I watched the female came and fed the young in the nest twice, then the other one twice, and

then the one in the nest once more. When she had left, the nestling in the tree flew down on the edge of the nest beside his mate. The male came and fed him once but did not feed the bird in the nest. When he had left, both young flew up into the tree. There I left them. That night they were not in the tree nor did I see them again.

Los Angeles, California.

SOME DATA AND RECORDS FROM THE WHETSTONE MOUNTAINS, ARIZONA ^x

By AUSTIN PAUL SMITH

OBSERVATION by contemporaries, ascribes *Junco phæonotus palliatus* almost exclusively to the pine zone of such regions as it inhabits. Yet it was the first Junco I recorded from this range—a single individual, ♀ adult, altitude 4800 feet. This happened on the 26th of September. Next day I flushed a flock of perhaps fifteen, a very few feet from the original location. They were then feeding in and about a growth of Ceanothus and poison oak, for which at most times they showed a preference. Thereafter the Arizona Junco could be noted regularly in the Transition zone, during my stay.

The Gray-headed Junco (*Junco caniceps*) became noticeable several days later, generally associated with the Arizona variety. However, one might chance at any time upon small flocks in the same general locality, but composed entirely of the one species.

Here is a record that strikes me as unusual, when altitude be considered: *Piranga rubra cooperi*, enjoying certain caterpillars that were defoliating the few trees of western walnut that had managed to gain a foothold in a canyon, a little above 4000 feet on September 27; a male in full plumage, and the third of its kind that had been noted that high during the season. Paradoxically, this date also stands for my last Western Tanager (*Piranga ludoviciana*), with an added 1000 feet in elevation. Of the Hepatic Tanager (*Piranga hepatica*) nothing was recorded after July.

As Swarth in his "Birds of the Huachuca Mountains," lays stress on the early departure from that group of *Icterus parisorum*, its persistence in remaining a resident of the Whetstones up to the day of my departure (October 5) is worth setting down. During August the adult birds were but seldom in evidence. Undoubtedly this was due to that month covering their molt period, as the few birds (five or six) I chanced upon, were all in such condition. September brought them forth again, the male birds to my mind, boasting quite as regal plumage as in the spring, the scaly appearance, caused by the gray edgings (occasionally white) of the feathers of the back, detracting in nowise from their splendor. Opuntia fruit ripened during September, and I imagine the Scott Oriole was care-free then, for they seem to feed on little else when these juicy cacti are available. Their sharp clear whistle gains a second life after the molt, and is super-enjoyable because of its solitariness in the forests of this range at such time.

^x This range lies thirty-five miles due north of the Huachuca Mountains.—A. P. S.

Warblers are a very interesting group we admit, but neither species nor individuals were represented sufficiently to gain proportionate rank. Townsend Warblers (*Dendroica townsendi*) I met with during the migrations, at about the 5000 foot level at all times. They limited themselves to such ravines as harbored a growth of madrona trees. Latest spring date: May 13; fall dates: September 5 to 21. Audubon Warblers (*Dendroica auduboni*), found in abundance during the earlier weeks of May, had all disappeared by the 20th, and no more were seen until October 1, when I secured an immature ♂ at 5000 feet. Black-throated Gray Warblers (*Dendroica nigrescens*) being plentiful at all elevations during my entire stay, I cannot give any arrival or departure dates. But a bird secured, with additional ones seen, October 28, along the Rio San Pedro, gives ground for believing them of very late departure from the highlands, and, with future investigation, a winter resident of the valleys of southern Arizona. The Tolmie Warbler (*Oporornis tolmiei*) was not recorded during the spring. An adult ♂ on September 5, was my first fall date; for a month thereafter it was of usual occurrence from where the oaks begin, up to the pines. Quite deliberate of movement, yet retiring, the brushy situations at all times were chosen, in preference to the arborescent growth. The commonest warbler here, the Pileolated (*Wilsonia pusilla pileolata*), was noted every month, only excepting June and July (absent May 26 to August 5).

Lucy Warblers (*Helminthophila luciae*) will claim attention during their season, in most any arroyo or wash between the mountains and San Pedro River, but none in the mountains proper. The single exception happened on June 3, which I can recall as an exceedingly warm day. Returning from a tramp about the foothills, and pausing to drink at the first spring encountered, a diminutive warbler, recognized as the Lucy, flew down and began quenching its thirst also, at a distance of ten feet. Elevation 4200 feet, among the oaks.

How eager I was, to make the reacquaintance of the Painted Redstart (*Setophaga picta*) after a lapse of some years. Still I believed myself doomed to disappointment up to the 22nd of July. Then a solitary bird, and no more, until after the heavy rains of the last week in August, which put the canyons in ideal condition for this species, i. e., freshened up the mosses and lichens; brought forth a heavy undergrowth; started many rivulets; and lastly, introduced innumerable swarms of midges into the world to enjoy the situation. And now too, the migratory time had arrived. So the two weeks from September 7 to 21, marked a period of abundant opportunity to study this species. Nervous energy in the bird is quite generally attributed in maximum to the wren, but I think I can say confidently, that no bird coming within the scope of my observation, has a better claim to a title of perpetual motion than the Painted Redstart: I have never seen it quiet for ten consecutive seconds!

Among the half dozen species of Woodpeckers, found in the Transition zone at times during my visit, the Gila (*Centurus uropygialis*) and Arizona (*Dryobates arizonæ*) drew the most attention from me—perhaps owing to their limited distribution within our country. In midsummer an occasional Gila Woodpecker ventured into the foothills, to prowling among the old mescal stalks, so numerous thereabouts; later on, by September 1, more were in evidence, and had pushed their range up to 5000 feet greater than when in their usual retreats (lowland valleys and mesa); rarely beating a tattoo or uttering a call; dividing their time between mescal and *Opuntia* cactus; and now and then inspecting an oak, from which they were generally driven away by a more pugnacious relative, the Ant-eating Woodpecker (*Melanerpes formicivorus*), a species that seemed as numerous as the

trees. Examples of *C. uropygialis* secured at this period, were all discolored about the forehead and chin with juice of *Opuntia* fruit.

Altho I well knew I was within the described range of *Dryobates arizonæ*, several days passed before a noise, leading one to the suspicion that it was the rapping of a small woodpecker, drew attention. It was not a loud sound, and being interspersed with periods of silence, made the clew somewhat difficult to follow; thus some time elapsed before reaching the origin of the noise. Here a ♀ *D. arizonæ* was working on an oak-trunk, not three feet above the base; while the trees around harbored unnumbered Bridled Tits (*Bæolophus wollweberi*), Lead-colored Bush-tits (*Psaltiriparus plumbeus*) and Rocky Mountain Nuthatches (*Sitta carolinensis nelsoni*). Very often did I run across a similar assemblage, but rarely were there more than one or two Arizona Woodpeckers in it. There is no recollection at hand, of noting above four adult woodpeckers of this species in view at once; more likely to chance upon a solitary individual than a pair at any time. The noisiest occasion I can accredit to the species occurred one spring day, when two adult females were located, perched upon a horizontal limb of a madrona, facing each other, and emitting a continuous volume of characteristic woodpecker notes, the effect being heightened by that peculiar muscular movement which accompanies the vocal utterances of some Pici. The continuity was possible by a relay system; and so engrossed were the participants, that I approached to directly under the limb and stood there at least two minutes, without being detected.

Taken as a rule, the Arizona Woodpecker is quite indifferent to one's presence; nevertheless it can be erratic at times. This is best observed during the breeding season, which may be counted as May here (this year only). Few male birds are then to be found, except on the lower declivities of the range, where they are nearly as difficult of approach as the largest members of the family.

There is a certain ravine here, that might with propriety be called Flycatcher Canyon. It was the delight of several of the species, that would be looked for in vain elsewhere in the range. So along this canyon, well up toward the neutral ground of oak and pine, the lonely Olivaceous Flycatcher (*Myiarchus lawrencei olivascens*) dwelt. It was a late comer tho, and not until June 9, did I secure any. On two occasions a pair were seen; all others as single individuals. Their note given at measured intervals was long drawn out, and of a single syllable. Tameness is of the usual Tyrannidæ average.

The same canyon was the sole resting ground of such Olive-sided Flycatchers (*Nuttallornis borealis*) as were recorded. Spending odd days here between September 6 and 17, it contrived to form a temporary brotherhood with a near relative, the Western Pewee (*Contopus richardsonii*). An amusing situation was developed on several occasions; the two species were observed side by side, on some dead bunch of trees growing on the canyon's side. Affinity in color and movement, and similarity in note, however, did not offset the disparagement in size.

Jays—three representatives of the group here. The Arizona Jay (*Aphelocoma sieberi arizonæ*), of whom every collector coming within its habitat will have a changing opinion, as to the advisability of existence as a link in the avian chain of nature: Depending on whether you are out to study its habits; or whether an interview with a varied bird life be frustrated by *A. s. arizonæ* spying you out and declaiming the discovery with enthusiasm for many minutes. But after all, its personality overbalances the hereditary meanness. Economically, it certainly does no harm. For dissect one and examine its craw any time before the acorns come, and you will find remains of Carabid, Elator, Buprestid and other beetles; true bugs of

many kinds; and those little dark gray moths that cling so cunningly to bark of various trees during the day—almost invisible to human eyes, but easy forage for the Arizona Jay. How well it assists in Uncle Sam's reforestation problem is apparent, when a steep hillside, devoid of arborescent growth, is watched closely during acorn season, provided it is the one selected by the Jays for their winter granary. The number of birds you would see journeying back and forth in the course of a few days might cause a mental convulsion, let alone attempting to count the acorns deposited. The ground universally selected contains much rubble, running to small fragments, say the size of a man's fist. Generally the acorns (for several are often deposited in one spot) are pushed under the side of the stone nearest to or facing the ravine; a wise provision for the birds' future, and a fortunate one for the possible future oak, as it guards against washing out in times of heavy rain; likewise conserving moisture in the months of drouth. The spring and summer of the present year (1907) were dry, very dry; yet in many slopes seedling oaks were growing vigorously. No parent oak in the vicinity grew at a higher level; and as the acorn is quite too heavy to be transported by wind action—at least upward—one may figure out conclusions.

Perhaps the Woodhouse Jay (*Aphelocoma woodhousei*) is resident, but I am convinced that, if so, they number but a fraction, when compared to the portion of the species that migrate here; and it was the visiting body that came to my attention. None were seen until September 21; next day found it fully represented; so by October 1 a comparative estimate of numbers would put this species and *A. s. arizonæ* on equal basis, with balance of power held by the Long-crested Jay (*Cyanocitta stelleri diademata*) which held forth in the pine zone until the end of September. After that, a few adventurous individuals wandered down as low as 4500 feet.

Barren was the opportunity for the study of water birds. In addition to an infrequent visit by Killdeer (*Oxyechus vociferus*), but a single kind came to be noted: A flock of eleven Black-crowned Night Herons (*Nycticorax nycticorax navius*) spending the morning of September 10 in a deep narrow canyon near the 4000 foot level.

Benson, Arizona.

SOME NOTES ON THE GREAT BLUE HERON

By H. W. CARRIGER and J. R. PEMBERTON

FOR a good many years a large number of Great Blue Herons (*Ardea herodias*) occupied a large nesting colony upon the tops of some eucalyptus trees at Redwood City, California. Thirsting for knowledge, and particularly bird-egg knowledge, the Redwood small boy made yearly trips to the heronry to study the inhabitants thereof, and so vigorous and attentive were their studies that the proud and classy Blue Herons declared a moving day, and the spring of 1900 found the once fruitful Mecca of the bird-egg boys a dreary and lonesome spot, except for a bunch of English Sparrows, who took possession of the old nests.

Mr. Chase Littlejohn, well known to most Cooper Club members, often wondered where the colony had moved to because the birds were as numerous as ever upon the marsh land between Redwood and the Bay. One day in 1902, Mr. Lit-

tlejohn happened to be hunting Clapper Rails' eggs when he stumbled upon the new heron colony, away out on the marsh, and flat upon the ground.

In May, 1903, the writers made a flying visit to this interesting heron colony and determined to visit it at some later date with the purpose of making a study of the colony.

Early in the morning of April 14, 1907, we got into a row boat at Redwood City and commenced a four mile row, following the winding sloughs. Many shore and marsh birds were surprised. At this date most of the waders and sandpipers were in flocks preparatory to their migration. Among the birds seen were *Numenius longirostris*, *Symphemia semipalmata inornata*, *Ereuntes occidentalis*, *Rallus obsoletus*, *Nycticorax naevius*, *Calidris arenaria*, *Merganser serrator*, *Arenaria melanocephala*, *Melospiza pusillula*, several species of ducks and a few gulls. An occasional solitary Blue Heron flying overhead kept us reminded of our



A CORNER IN THE TERRESTRIAL COLONY OF GREAT BLUE HERONS;
YOUNGSTERS IN WADING

quest and tho rowing was tiresome we kept at it.

Soon the slough connected with a large open channel and the Bay itself was seen. Thinking we must be near the colony, we landed on the bank and saw it to be about a half-mile further on. Herons were arriving and departing from all directions, and with our glass we could see some 50 or 60 herons standing around.

Resuming rowing we made for a landing place within one-fourth mile of the colony and another peep was taken from the bank. This time a new scene was displayed. The Herons had seen our approach and no flying birds were evident, while those which were at the colony before, were now walking stealthily away. Wishing to get a photograph of the flock of birds we rowed rapidly toward them, and altho completely hidden from the birds while rowing, when we made our final landing the birds had moved a considerable distance away, too far to photograph. As soon as we stood out on the marsh land and took a few steps toward the flock,

they rose as one and finally lit about a quarter of a mile away where they remained until our visit was over.

Young birds not quite able to use their wings were walking away about 100 yards off. Others not so large were hiding in bunches of grass and in the shelter of slough banks. When we were within the colony proper one-third of the nests were vacant and their young were walking around somewhere, to be kicked up by our feet almost anywhere.

The colony consisted of 49 nests and covered an area of about 200 feet by 100 feet. The nests were built always upon the very edge of the little sloughs of three or four feet depth, and were sometimes within five feet of each other and as far as twenty feet apart; but usually about ten feet was spaced between nests. All nests were constructed of the dried branches of the common marsh grass, and were quite



TYPICAL NEST AND EGGS OF THE GREAT BLUE HERON

serviceable structures. They varied in size from two feet in diameter flat on the ground to four feet across and 14 inches in height. Nearly all nests were built upon an old one, and probably in a few years quite high monuments will be erected. The contents of the nests varied from fresh empty nests to those containing young about big enough to find their way home again. Sets of eggs were 2, 3 and 4, and both fresh and incubated eggs were plentiful.

The young birds were of course the most interesting to study. One lone youngster just hatched was trying to eat up his shell. The noise of the squeaking beauties(?) at times was quite inconceivable, especially from the ones about three weeks old. These had raised a good growth of feathers, and being about the size of good "broilers" were

able to be both seen and heard.

They would make frantic efforts to spear us when we were within ten feet, and especially during the focusing of a camera they were never still. So rapid were their spear-like thrusts that most of the pictures are a blurred streak. The young birds which still retained their down were the least interesting. They would sit quietly until poked, when they would rise up and make ready to bite the intruder. Their noise was quite different from the large birds, being a continual low lonesome cluck.

Some of the little fellows were suffering from the heat and it is probable that when weak from hunger many die under the blistering summer sun.

Some of the young birds were about the size of a Bittern, and these were con-

stantly walking about the colony, occasionally walking about in the water as one photo shows. It is interesting to imagine how such apparently restless birds could ever stay within the limits of a nest in the top of a tall tree.

One very interesting feature of the young birds were the differences in the sizes of one brood. In one nest there were four young, the smallest about the size of a quail, while the largest would have outweighed a Canvasback. In some nests a dead bird could be seen beneath the feet of its brothers, and many nests were seen with only two half-grown birds in it and with the rotting remains of the other two birds beside the nest.

After collecting several sets of eggs we left the heronry and took our long tiresome row back home, swearing to come "via launch" next time. But on May 12th we again visited the colony by rowing out, and found everything much the same as it was a month before. Young in all stages of growth were present, also fresh eggs.



THE NOISY AND COMBATIVE STAGE

Allowing three weeks for eggs to hatch, and four, tho five is probably more correct, for the birds to be reared, our observations tend to show that the colony was in active operation from March 1st to July 1st.

Several Japanese oyster men were seen on our second trip and they told us that no one ever went near the colony. It is thus evident that the herons have now an isolated and safe place to rear their young, and also are in the center of their fishing ground which is quite an item considering that at their old colony food had to be carried six or seven miles to their young.

The eggs are of the usual pale greenish blue color, and sets number 2, 3 and 4, with three and four about equal in occurrence. The eggs vary somewhat in size from a short fat variety to a long sharply pointed size. The average of 8 sets at hand is 2.48×1.80 inches. This shows them to be .30 inches wider than most zoological works give them to be.

Stanford University, California.

NOTES FROM SAN CLEMENTE ISLAND

By C. B. LINTON

SAN Clemente Island is twenty-two miles long by four miles wide. The greatest altitude is about 1500 feet. The northwest one-half is very barren, supporting only scrubby sage brush and cacti, with an occasional holly bush in the larger ravines. In this portion of the Island, about four miles from the westerly end, is situated Howland's Ranch, on Howland's Bay.

In the canyons of the northeast coast of the southeast half, is found an abundant growth of holly, sage, ironwood and wild cherry trees, the latter often reaching a height of twenty to thirty feet, and in many canyons forming dense miniature forests. Most of the canyons in the vicinity of Mosquito Harbor are deep and precipitous and in places well-nigh inaccessible.

It was in these larger canyons that most of the collecting was done, altho trips were often made to other points. Smugglers' Cove is situated almost directly opposite Mosquito Harbor, on the southwest coast. The coast and adjoining hills here are similar to the northwest portion of the island. Visits were made to Clemente in January, February, March, April and October, 1907.

I wish to tender my sincere gratitude to Prof. Joseph Grinnell for the time he has devoted to the identification of the various specimens submitted; also for his untiring patience in coaching and instructing a beginner. I am indeed deeply indebted to him for many favors extended and many suggestions offered during my several trips to the Santa Barbara Islands. Mr. Grinnell has carefully examined the specimens secured and pronounces the following identifications correct.

Colymbus californicus. American Eared Grebe. Large flocks were seen near the northwest end of the island. December to March inclusive, several specimens preserved.

Ptychoramphus aleuticus. Cassin Auklet. Frequently seen near shore; especially common near Ship Rock, west coast, and in the channel between Catalina and San Clemente Islands.

Larus californicus. California Gull. Fairly common in January and February.

Larus heermanni. Heerman Gull. Abundant everywhere. Those observed in October were in winter plumage, gray heads; while those noted during December, January and February were all in summer plumage, snowy white heads. Examination showed the crops of many specimens to be filled with shrimps, obtained from the kelp fields 50 to 300 yards off shore.

Sterna maxima. Royal Tern. Very common near northwest coast and Howland's Bay, during October, December and January; few seen after February 15.

Fulmarus glacialis glupischa. Pacific Fulmar. Often seen while crossing the channels; none observed near shore.

Oceanodroma melania. Black Petrel. A dark petrel, probably of this species, seen on several occasions while crossing the channel.

Phalacrocorax auritus albociliatus. Farallone Cormorant. Fairly common along the northeast coast. One flock of 200 or more seen near Howland's February 5. Several specimens preserved.

Phalacrocorax penicillatus. Brandt Cormorant. During January and February, immense flocks were seen daily, flying from their roosting places on the rocks of the northwest coast to their feeding "grounds" along the northeast shore. Both brownish young and adults were numerous. Specimens in full breeding

plumage, i. e. with white filaments along the sides of head, neck and back, were secured in February and March. Breeds in small numbers on the northwest coast.

Phalacrocorax pelagicus resplendens. Baird Cormorant. A few pairs were seen near Mosquito Harbor, during March. These were in breeding plumage (white flank patches). One specimen in winter plumage, taken in October.

Pelecanus californicus. California Brown Pelican. Frequently seen near northwest coast. Adults and immature specimens were secured. None were seen during late March.

Aythya affinis. Lesser Scaup Duck. Several ducks which I believe to be of this species, were seen during February. In October several thousand ducks, of several species, were reported off the northwest coast by fishermen.

Ardea herodias. Great Blue Heron. Several pairs are resident on the Island.

Heteractitis incanus. Wandering Tattler. During October and March, Tattlers were frequently observed feeding along the outlying rocks in the vicinity of Mosquito Harbor and Smugglers' Cove. In all, sixteen specimens were preserved.

Actitis macularia. Spotted Sandpiper. Fairly common on both coasts during fall and winter.

Ægialitis nivos. Snowy Plover. Flock of fifteen or twenty seen on the sandy beach, Smugglers', October 15.

Arenaria melanocephala. Black Turnstone. Several seen near Smugglers' in October and April; twelve specimens were taken.

Zenaidura macroura. Mourning Dove. Not uncommon in the vicinity of Smugglers'. A few seen, in March, near Mosquito Harbor; very shy during that month but later becoming quite tame, feeding in the grass near camp. Seen in October. Breeds.

Buteo borealis calurus. Western Red-tail. Several pairs were nesting on the Island.

Haliaeetus leucocephalus. Bald Eagle. Found nesting in the larger canyons, one-fourth to one mile from the coast, during February, March and April. Several nests were visited and two fresh sets of two eggs each taken, February 15, and March 15. Scattered about the base of the cliffs in which the nests were situated, were numerous skeletons of sheep and young lambs.

Falco peregrinus anatum. Duck Hawk. One pair seen near the northwest coast and another near Mosquito Harbor. One pair, at least, bred on the Island this year.

Falco sparverius. Sparrow Hawk. These trim little falcons were occasionally seen hovering over the brushy mesas and cacti-covered hillsides of the northeast coast, and inland. Only one specimen, a male, was secured. This differs somewhat in general coloration from specimens taken in the coast district of the mainland, but the normal variation in the species is great.

Pandion haliaetus carolinensis. American Osprey. During January and February a number were seen. In March they were observed remodeling old nests along the northeast coast and two fresh sets were found: March 9, one of three; March 31, one of three. On April 2, I visited a colony of twelve or fourteen nests on the southeast coast. Here, incubation ranged from fresh to two-thirds advanced. One set of four eggs was secured, and another found; one egg of the latter set had been crowded out of the nest onto the rocks and broken. Nests varied in size from a few sticks and pieces of sea-weed to immense piles of sticks and kelp four to six feet in height by three to five feet in diameter, cavity of the largest being (diameter) twelve inches by (depth) four inches. The majority of nests were built on columns of rock standing directly in the surf.

Speotyto cunicularia hypogaea. Burrowing Owl. The small rocky ravines extending halfway up the hillsides from the shore of the northeast coast, seemed to be the favorite hiding places of the Burrowing Owls during the day. The specimens secured differ very slightly, or not at all, from those of the mainland coast district. Resident.

Ceryle alcyon. Belted Kingfisher. Several seen.

Sphyrapicus varius nuchalis. Red-naped Sapsucker. While hunting among the cherry and holly bushes in a narrow valley in the high mesa above Mosquito Harbor, October 11, we secured two immature sapsuckers of this species. No others were seen on the Island.

Colaptes cafer collaris. Red-shafted Flicker. Frequently seen and heard in the canyons near Mosquito Harbor. An adult ♂ and ♀ secured in October.

Aeronautes melanoleucus. White-throated Swifts. Seen on several occasions. March 7, observed entering crevices in the cliffs near Howland's Bay.

Selasphorus alleni. Allen Hummingbird. Fairly common in suitable localities. April 1, I found a nest containing two fresh eggs; April 7, another containing one fresh egg, and two unfinished nests. As I left the Island April 7, I only preserved the complete set and nest of April 1. These nests were composed of wool and spiderwebs, partially covered with lichens and placed on low-hanging twigs of holly and cherry bushes in the canyons.

Tyrannus verticalis. Arkansas Kingbird. One seen near the spring, Mosquito Harbor, April 3, and on the 5th I secured an adult ♀ in the same locality.

Sayornis saya. Say Phoebe. Fairly common over whole Island, excepting the Smugglers' Cove region.

Sayornis nigricans. Black Phoebe. Seen only along northeast coast. March 20, an unfinished nest was found fastened to the side of a cave just above high tide mark. One specimen preserved.

Empidonax difficilis. Western Flycatcher. The first pair was observed April 1, in a deep gorge near Mosquito Harbor. April 3 several were seen and secured. Only three or four noted during October.

Otocoris alpestris insularis. Island Horned Lark. Very common over the whole Island. Large series secured.

Corvus corax sinuatus. Mexican Raven. Abundant resident. Nesting in the cliffs, often on ledges directly over the water. A large series preserved. Among these were several specimens that would easily have passed for the much sought for "Clarion Island Raven." It is my opinion they are *Corvus corax sinuatus* birds-of-the-year. The size and general appearance coincide with the description of the Clarion Island Raven. Altho common at present the ravens are being rapidly exterminated thru the use of poisoned carcasses, by the sheep men who (rightfully) accuse them of killing many young lambs.

Sturnella neglecta. Western Meadow Lark. Common on the mesas of the coast, and inland.

Icterus bullocki. Bullock Oriole. One adult male secured March 31.

Carpodacus clementis. San Clemente Linnet. Abundant resident everywhere. Several nests containing incubated sets were found in the sheds at Howland's, March 1. Others were found near Mosquito Harbor, in the cacti and sage. March 9 to April 7 a large series of skins were preserved. The feathers about the base of the bills of several specimens were stained with the juice of the "cactus apple." This fruit forms the chief food of many island birds during certain seasons.

Zonotrichia querula. Harris Sparrow. While watching the House Finches, Song and Gambel Sparrows drink and bathe in the sheep troughs at the windmill,

Smugglers' Cove, October 15, I was surprised to see a Harris Sparrow appear among them. Not having my gun I waited until the sparrow had finished a bath and returned to the feeding grounds under the holly bushes nearby. I then secured my "aux" from my father and awaited the sparrow's return for another drink; this it did in about half an hour. This specimen differs slightly from two specimens (of the same month) in my collection, from Lawrence, Kansas.

Zonotrichia leucophrys gambeli. Intermediate Sparrow. Very common winter visitant.

Zonotrichia coronata. Golden-crowned Sparrow. Common winter visitant.

Junco hyemalis thurberi. Sierra Junco. One specimen, secured at White Rock Spring on the northeast coast, October 13, is probably *thurberi*.

Amphispiza belli. Bell Sparrow. Common resident on the brushy portions of the northwest half of the Island.

Melospiza clementæ. San Clemente Song Sparrow. Abundant resident. Common in the yards at Howland's, nesting in the scrub cacti and vines within a few yards of the hacienda. March 31, three nests were found in the corral near the stables; one contained four young one week old, the others having incomplete sets. These nests were built a few inches from the ground in the center of the cacti beds, which, being covered with a thick growth of vines, completely hid the nests. A large series of skins preserved.

Passerella iliaca insularis. Kadiak Fox Sparrow. Three specimens secured in the stable yards, Howland's, January 23 and February 7. October 5, February 8, and April 1 I secured other specimens near Mosquito Harbor.

Pipilo clementæ. San Clemente Towhee. None were seen within eight miles of the northwest coast, but they were very common near Mosquito Harbor. The "catbird" call of *P. m. megalonyx* of the mainland, said to be "unknown to this bird", I often heard; in fact it was the common note heard at this season. *P. clementæ* is a shy and silent bird during breeding season, which probably accounts for the statements of observers during that period, limiting his vocal attainments to the "towhee" call. During October the towhees were observed shaking the overripe cherries from the twigs of the low hanging branches, then flying to the ground and securing the well-earned delicacies. This curious operation I often watched them perform.

Piranga ludoviciana. Western Tanager. Several seen and two specimens secured near Mosquito Harbor.

Piranga rubra cooperi. Cooper Tanager. A ♀ specimen was secured by my father, October 11, in the holly brush in a narrow valley on the high mesa near Mosquito Harbor. Several Western Tanagers were observed here.

Lanius mearnsi. San Clemente Shrike. Fairly well distributed over the whole Island but extremely shy. March 7 I secured a ♀ with nest and five eggs, incubation two-thirds. This nest is typical of the species; composed of dry twigs and weed stems, thickly lined with rootlets and wool and well concealed in the thick branches of a holly bush in a ravine near the northwest coast. Another nest was found March 8 near the coast midway of the Island, containing one downy young and two infertile eggs. Near Mosquito Harbor, March 19, I secured a ♀ and five fresh eggs. The males were extremely shy, giving the alarm from their lookout perches and leaving the vicinity of the nests immediately upon sighting the intruder. The three nests measure in inches as follows:

Outside	{	depth, 4.50, 3.25, 3.
		diameter, 9, 7.80, 7.50.
Cavities	{	depth, 2.20, 2.10, 2.
		diameter, 3.25, 3.20, 3.50.

Helminthophila sordida. Dusky Warbler. Common from January until late September, in all the large canyons. Rare on the Island in October, but common on the mainland coast.

Dendroica auduboni. Audubon Warbler. Common, October to February inclusive.

Anthus pensilvanicus. American Pipit. One specimen secured, October 18, on the high mesa.

Mimus polyglottos leucopterus. Western Mockingbird. Fairly common. On the low cacti-covered mesas back of Smugglers' Cove, April 2, I found several unfinished nests in the cacti and holly bushes. The feathers of the foreheads and skins of several specimens were stained by the juice of the cactus apples. The Mockingbirds of the islands have been reported by some collectors as being somewhat different from *M. p. leucopterus*. This theory we have clearly disproved, the specimens taken being identical with mainland specimens, as far as discernible by us.

Salpinctes obsoletus pulverius. San Nicholas Rock Wren. Fairly common in suitable localities over whole Island. Thirteen specimens preserved during October. In coloration of the back feathers, specimens range from rich brown to very pale grayish-brown, some of the browner ones comparing very closely with the coast mainland specimens.

Thryomanes leucophrys. San Clemente Wren. Very common on all parts of the Island, especially so on the brush and cacti-covered hillsides of the northeast coast.

Hylocichla ustulata. Russet-backed Thrush. Common in the larger canyons in October.

Hylocichla guttata nana. Dwarf Hermit Thrush. Common over entire Island, October until April.

Ixoreus naevius. Varied Thrush. Near Howland's in January and February several specimens were taken. Several secured in the canyons near Mosquito Harbor, March and April. None seen during October.

Long Beach, California.

SOME HINTS ON THE PREPARATION OF AN OOLOGICAL COLLECTION

By ROBT. B. ROCKWELL

THE time has not long passed when egg-collecting as a fad was very popular in this country, and as a result a great many collections were formed in different parts of the country, many of them thru their vast size being veritable monuments to the rapacity of the "collecting mania." This unnecessary and in many instances wanton destruction called forth the just protests of a growing army

of bird lovers and students, who while they realized the necessity of judicious collecting in all lines of scientific work, entered a strenuous objection against the collecting of vast numbers of nests and eggs, most of which found their way into the dusty drawers of private collections, far from the reach of the public or of research work along oological lines. So pronounced has this feeling against "egg-collecting" become within the past few years, that many collectors have stopped entirely and many others have become much less active. In the case of the many very large private collections it is to be hoped that the great destruction to bird life caused in amassing the collections may be counteracted to some extent, at least, thru their donation to some public institution where their educational value would be of some importance, while a great many of the smaller collections will probably be disposed of in a similar manner or else made a part of larger private collections.

It is to be hoped that egg-collecting as a fad will continue to receive the disapproval of bird-protectionists and of the public in general, but it is equally desirable that in their zealous espousal of the cause, they do not burden the true oologist with the unpleasant term "egg-collector"; for the judicious collecting of nests and eggs is just as important and just as necessary a part of the study of ornithology today as it was forty years ago (altho possibly on a somewhat smaller scale) and the student of birds' nests, eggs and their breeding habits who has nothing left to learn need only proclaim the fact and we will hail him as the peer of all our revered pioneer ornithologists.

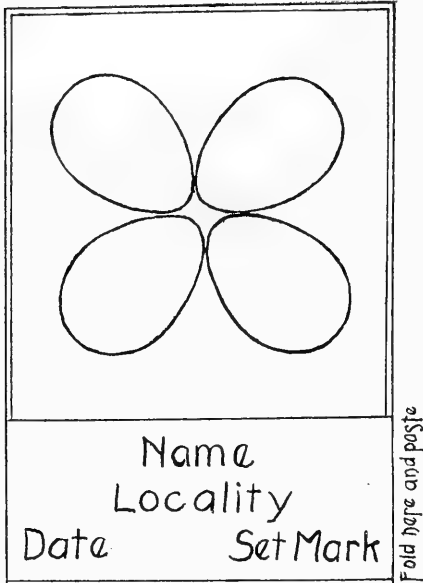
But in order that a collection of birds' eggs, either public or private, may be of any scientific or educational value it must be arranged and labeled in a thoroly comprehensive manner. No other class of specimens requires careful labeling so much as eggs, for where is the man who can tell the difference between eggs of the Rough-winged and Violet-green Swallow, or between those of the Oven-bird and the Long-tailed Chat in a strange cabinet, and of what possible use can a collection be put to unless the observer knows definitely what he is looking at?

The writer has spent some ten years in experimenting with the many different ways of labeling eggs in the cabinet, and what at first seemed a very simple thing indeed, has thru repeated trials and much studying grown to be a rather complicated proposition. It is therefore the purpose of this paper to set forth some of the results of these experiments, with the hope that some of the CONDOR readers may find some hints herein that will be of use to them. Many of the ideas will probably prove old and hackneyed to some of the readers, but if benefit derives to even a few the purpose of the paper will be fulfilled.

The question of proper housing for the collection is far too broad a question to deal with at length. I have used several designs of cabinets, all of which have proven more or less satisfactory, provided the vertical spacing of the drawers was economized and the drawers ran smoothly. I have also experimented with the Cambridge Cans: metal boxes with a tongue and groove flange on the cover and clasps which make the case air tight. These cans are fitted with tin runners which are adjustable according to the depth of the drawers or trays, but while the theory may be correct the mechanical imperfections of all of these cans I have seen make them impossible for a finely prepared collection. By far the finest case I have seen is the one being adopted by many museum and private collectors and is giving perfect satisfaction. It is of metal strongly cased in wood with a swinging door which closes air-tight by means of binding clasps and a rubber pad. The drawer runners are of hard wood and very smooth and the trays are of hard wood with compo-board bottoms. Taken in all it is an ideal cabinet (in everything but gen-

eral appearance) being dust, insect, and mouse proof, with beautifully smooth sliding trays, and every inch of space economized, leaving very little to be desired.

The next item is probably trays. Except for a number of "freak" shapes there are but two styles of trays, the square and the oblong. I will not try to change any reader's opinion as to the proper shape for trays, but if you haven't tried the square trays, just experiment a little and no argument will be necessary.



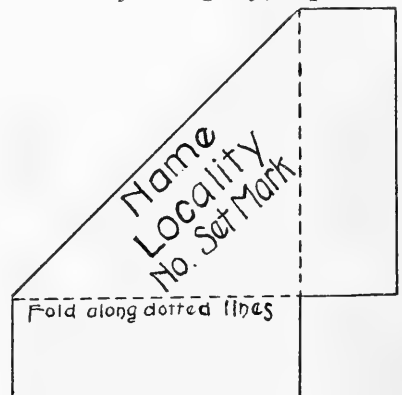
ILLUSTRATES HOW THE OBLONG TRAY
SHOULD BE LABELED

Trays $2\frac{1}{2}$, 3, 4, 6, and 8 inches square will accommodate all sizes of eggs and sets. The two smaller sizes work well if made $\frac{3}{4}$ inch deep, while the 6 and 8-inch trays should be at least $1\frac{1}{4}$ inches deep, as the large eggs roll about in a shallow tray. The 4-inch tray should be made in two depths so as to conform to either of the other sized trays, as trays of two depths in the same drawer look badly.

After many trials I went back to cotton as the best material upon which to lay the eggs. Sawdust dyed black gives a beautiful effect to a drawer of eggs and brings out the color values of the eggs in good shape, but it is very dusty, forms an ideal home for many forms of insects, is heavy and easily displaced by any slight jar. Grated cork, plaster paris, and similar substances have all been thoroly tried but have proven uniformly unsatisfactory. Colored cotton of any kind, while rather pleasing to the eye upon first glance, destroys the fine shades of color of the eggs, and makes a display rather of cotton than of eggs. A fine

grade of white cotton shows the exact shade of each egg, without detracting from it in the least; can be made to hold the eggs nestled securely but lightly, to prevent their rolling; is free from insects, practically without weight, can be handled pleasantly and easily and is eminently the most satisfactory of all materials for this use.

The question of how to label a set of eggs in a tiny tray, without detracting from the general appearance of the eggs themselves is the one thing which has caused me more sleepless nights than any other phase of this subject. I tried laying tiny slips with the name of the species upon the cotton beside the eggs, but they were always crooked or out of place and gave the drawer a decidedly bedraggled appearance. Little blocks of wood with the label pasted on and set in front of each tray looked very well, but the weight of the wooden blocks and the large amount of work necessary to complete the labeling caused this to be abandoned. Little labels stuck vertically in front or back of the eggs in the tray produced a remarkable display of labels with no eggs to speak of in sight. After almost despairing of ever solving the problem I hit upon the plan of making a three-cornered

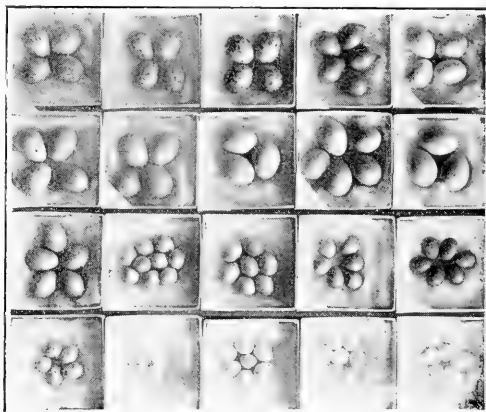


TRIANGULAR LABEL FOR THE SQUARE
TRAY

label to fit on a corner of the tray with ears or laps to paste on the sides of the tray. The accompanying sketch and photos will show how well this overcame all objections. There is sufficient room for all necessary information on the label, it is easy to make, is permanent when once pasted in place, and most important of all does not interfere with the eggs in any way, and does not detract from the general appearance of the display. I have given these labels a thorough trial and they seem to fill the bill perfectly. For use with the oblong trays a label pasted across the front or back of the tray, leaving the exposed portion of the tray square, has proven the most satisfactory; but where it is necessary to conserve space this label is practically useless, as it takes up so much room.

Probably every one who has a collection has the eggs arranged to conform to the A. O. U. nomenclature, which is without question the best plan of arrangement. It is also very advantageous to arrange the eggs so that the families or genera may be separated from each other. Little strips of wood about a quarter of an inch wide and the same height as the tray, placed between the trays of different genera, accomplish this neatly and easily and thus show at a glance the different types of coloration in the family or genus. These strips can only be used where the trays do not exactly fit the drawer, but as it is very seldom that a drawer is found that will hold a certain number of trays without any waste space this difficulty is of very little moment. On these strips may be pasted the family and generic names if desired.

If one wishes to have drawers fit the trays exactly, for trays of the size mentioned above, a drawer 24 inches square inside is the most convenient size, as 24 is exactly divisible by 3, 4, 6 and 8.



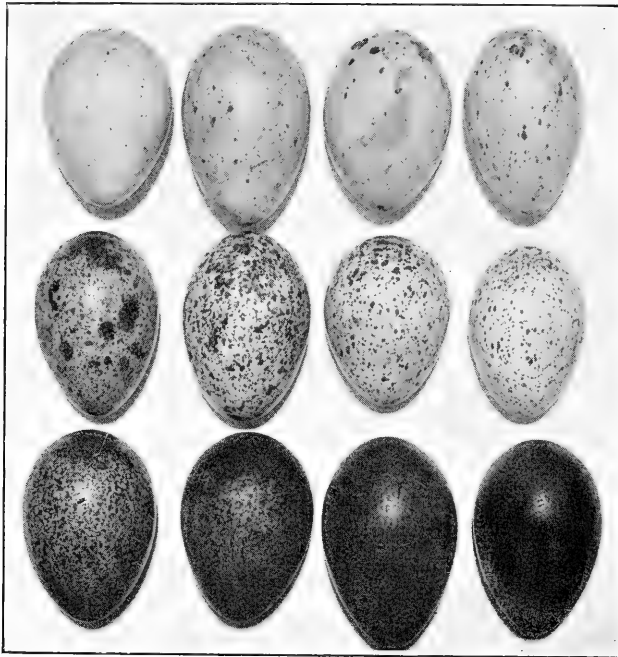
CORNER OF A CABINET DRAWER SHOWING HOW INCONSPICUOUS THE TRIANGULAR LABELS ARE

Without any question the data accompanying any collection of eggs is the most important feature of the collection and there are many methods of housing the data slips. The old-fashioned way was simply to lay the slips loosely in the drawer with the eggs, which is not only dangerous to the eggs, but also leaves many opportunities to lose the data, without which the sets are useless. A book composed of large envelopes into which the data may be slipped works fairly well, but has many disadvantages. The best idea I have seen in this line is one which originated with the well known oologist, Fred M. Dille, and which covers every requirement fully. It is no less than a modification of the vertical card system, in which a large durable envelope with a data blank printed upon it is used instead of the cards. The salient points of each data are written on the envelope, the data enclosed in the envelope and then filed in vertical card files according to the A. O. U. number. The advantages of this system are many: by repeated handling the original data becomes soiled and often mutilated (especially is this true in public collections) while the envelopes if made of durable manila paper will stand a great deal of handling without injury, and even if they are worn out a new one may be copied from the original without injury to the set represented. Again, as nearly every collector has a different sized data blank it would be practically im-

possible to file these slips under the vertical system unless they were enclosed in something of uniform size. And last but not least the great ease with which any desired data may be found in a vertical system of this kind makes it the handiest system imaginable.

Another idea which Mr. Dille has worked out is an "autograph data" blank, which is of the same design as his regular blanks, but which he sends to collectors who furnish him with sets and has them write the original data on *his* blanks but over their own signatures, thus giving him the original data on uniform blanks.

A tabulated register of all sets coming into and leaving the collection, which



A SERIES OF THE EGGS OF THE AMERICAN CROW
SELECTED TO SHOW VARIATION

gives the date, species, locality, collector, incubation, from whom secured and to whom disposed, is also a great assistance in a well ordered collection, altho many collectors seem to feel that this is superfluous.

One might continue indefinitely to jot down the hundreds of little hints and ideas that are produced by continuous experimenting, but I have covered the points which have always given me the most trouble and I hope they may prove of benefit to the reader interested in this line.

Denver, Colorado.

FROM FIELD AND STUDY

Dates that are not Data.—Possibly no idiosyncrasy of the collector causes more trouble than the habit of abbreviating dates on labels, for instance 1. 2. 07, or better still, 1 | 2 | 07. Does this mean January 2nd, 1907? In some cases it does; but it may mean February 1st, 1907, and the only way for the unfortunate ornithologist to guess the meaning is to have skins from the same collector having the day higher than twelve, thus 13. 2. 07. Even this is not certainty; for the collector sometimes changes his formula and it requires an expert in plumage cycles to decide which is which.

There are variations to this that once understood are not so confusing; 1. II. 07 means February 1st, 1907, but how about 19. 1-11. 00? This is happily confined to Russian collectors as far as I know and I think should read November 1st, 1900, but whether old style or new style is not for me to say.

Moral: Write the month plainly in letters of ink that fade not, forgetting not the day and year of reckoning.—J. H. FLEMING, *Toronto, Ontario.*

Destruction of Imperial Woodpeckers.—Recently there came to my knowledge facts relative to a deplorable slaughter of the Imperial Woodpecker (*Campephilus imperialis*), not so very far south of our border.

Two prospectors (one of whom imparted the information given herewith) were working over a region in west central Chihuahua, some fifty miles west of Terrazas (pueblo), a mountainous and heavily forested country, much frequented by the bird in subject. One of the men had heard somewhere of the rarity of the species, and that it bore a commercial value, but, erroneously, his conception was that the bill was the portion in demand, and not the prepared skin. Working on this idea he shot some seventeen of the magnificent creatures in the course of a few months, and cut off the bills, figuring them at \$25.00 each, until, on reaching civilization again, he was chagrined to find his material utterly worthless.—AUSTIN PAUL SMITH, *Benson, Arizona.*



A Curious Bird Tragedy.—A male specimen of the Varied Thrush (*Ixoreus naevius*) which had met death in an unusual manner came into my possession some time ago. It was found by my brother beneath a California live oak after a spell of rainy weather. As the accompanying illustration shows, a portion of an acorn shell was wedged upon the tip of the upper mandible, in such a way that it pressed firmly against the crown. Upon skinning the specimen, severe skull injuries were found, caused by the bird in its endeavor to remove the acorn.

The bird probably forced the acorn upon its bill while digging for insects among the leaves. It was in good condition, proving that death came before starvation could emaciate its body.—CHARLES H. RICHARDSON, JR., *Pasadena, California.*

VARIED THRUSH KILLED BY ACORN WEDGED UPON THE BILL

A Vermillion Flycatcher in Los Angeles County, California.—I desire to record the taking

of a Vermillion Flycatcher (*Pyrocephalus rubineus mexicanus*), male, at El Monte, California, February 8, 1908. It was taken in the willow-bottom about a mile from that town. The bird was not shy and acted about the same as any other bird of this family.—HOWARD W. WRIGHT, *Pasadena, California.*

Junco hyemalis hyemalis.—While collecting in the hills back of Palo Alto, California, on November 24, 1907, two specimens of *Junco h. hyemalis* were procured from an unusually large flock of Juncos. By following the birds from tree to tree across an orchard I was able to identify three more of these Eastern Juncos from the majority of the flock which were *Junco h. pinosus*. I have often looked for these rare winter visitors, but these two are the first I have ever been able to collect. The specimens are indistinguishable from specimens of *Junco h. hyemalis* from Wisconsin.—J. R. PEMBERTON, *Palo Alto, California*.

Brain Parasite in White-necked Raven.—During a tramp about the foothills of the Whetstone Mountains, Arizona, May 25, 1907, my attention was directed to a White-necked Raven (*Corvus cryptoleucus*) some forty feet overhead, by its strange circular flight and gyrating movements. No birds of its kind were in sight at the time, and its indifference to my presence also surprised me; so after some moments of observation, I brought it to the ground with a charge of buck-shot.

In skinning the bird, close examination was paid to the brain-case and orbital region, and I was rewarded by finding, directly back of the eyes, and extending partly into the brain, a parasite more than an inch in length, about the thickness of wrapping twine, pale yellow in color. The parasite showed considerable activity for an hour or more, when immersed in water.

The bird's sight may or may not have been impaired, tho cursory notice of the eyes, after being wounded, and before it expired, showed nothing unusual. Notwithstanding its size, the parasite must have been of recent date, with rapid growth, as the bird was an adult ♂, and it would seem unlikely that any animal in the fierce struggle for survival in nature, could exist for a year or more in a defective mental state, as this bird's actions would clearly indicate.—AUSTIN PAUL SMITH, *Benson, Arizona*.

Goonies of the Desert.—Those of us who have undertaken voyages across the ocean will readily recall the almost constant presence of goonies, or albatrosses, which fly along in the wake of the boat closely scrutinizing the sea surface for any sort of refuse that may serve them as food. In crossing the deserts of New Mexico, Arizona, and southern California recently, I noticed a similar habit on the part of the ravens. As I sat on the observation platform at the rear of the train, I repeatedly saw these goonies of the desert fall in behind the train, following along above the track evidently on the lookout for scraps thrown from the diner. The birds were nearly always in pairs. In case the grade was heavy, as is the climb up to San Geronio Pass out of the Salton Sink, the ravens could easily keep up with the train, even when they now and then alighted to investigate something of suspected interest. Elsewhere the birds were easily distanced by the train. We can infer that these scavengers regularly follow the trains back and forth across the desert, securing a substantial addition to their primitive food supply.—J. GRINNELL, *Pasadena, California*.

The Blackburnian Warbler Noted at Ft. Brown, Texas, December 21, 1907.—A single bird observed for several minutes in the pecan trees that line the drill ground. As it came within a dozen feet of where I was sitting, on several occasions, all doubt as to identity was precluded. Probably a ♂ adult.

Heavy fogs, with some rain and considerable wind, characterized the two preceding days, as well as the morning of the day in question. And as a careful search disclosed no other of the species or genus, it can probably be counted only as a tempest-tossed individual adding a very late date to the autumnal migration, within the U. S., of *Dendroica blackburniae*.—AUSTIN PAUL SMITH, *Benson, Arizona*.

How Large a Bird Can the California Shrike Kill?—On February 6, 1906, I witnessed a California Shrike (*Lanius ludovicianus gambeli*) overtake and kill a female Golden-crowned Sparrow (*Zonotrichia coronata*). The sparrow was pursued in the open, but the shrike gradually gained on it, forcing it to seek the protection of a thick bush. Here again, the sparrow employed all its faculties to elude its pursuer, but was finally overtaken and killed.

On examination of the victim, the skin of the neck was found to be cut and the vertebra broken. The shrike was shot and proved to be a female. I have known shrikes to kill birds the size of a Western Chipping Sparrow, but never any as large as *Zonotrichia coronata*. It would be of interest to know how large a bird the California Shrike can kill.—CHARLES H. RICHARDSON, JR., *Pasadena, California*.

The Red-winged Blackbirds of Colorado.—Following the suggestion of Prof. W. W. Cooke of the U. S. Biological Survey, the writer undertook to collect a series of *Agelaius* thruout the fall and early winter, for the purpose of ascertaining definitely what form occurred in the vicinity of Denver during the winter.

With the assistance of Mr. L. J. Hersey of Denver, and Messrs Wm. and George Richards of Littleton, twelve birds were secured, at intervals of about one week. These were forwarded to the Survey and identified by Mr. Oberholser. Six of the birds were classed as *A. p. fortis*, the prevalent breeding bird in this section, while the remaining six were classed as *A. p. neutralis*, the Great Basin form. So far as I know *neutralis* has not been definitely recorded for Colorado before.

The addition of *neutralis* to the Red-wings of Colorado, makes four forms of *Agelaius* found within the State: the typical form (*phaeniceus*), *fortis*, *arctolegus*, and *neutralis*. Just what ranges, seasons, etc., these different forms occupy can only be definitely determined by exhaustive field work, and should furnish a very interesting line of work to the field collectors of the State.

The following table does not seem to point to any positive conclusion, but it is probable that *neutralis* is generally found in this section after the bulk of *fortis* has gone south.

No.	Date	Locality	Collector	Form
1	Oct. 5	Barr	Hersey	<i>fortis</i>
2	" 13	Littleton	Richards	<i>neutralis</i>
3	" 20	"	"	<i>fortis</i>
4	" 30	"	"	"
5	Nov. 2	Barr	Hersey	"
6	" 6	Littleton	Richards	"
7	" 12	"	"	<i>neutralis</i>
8	" 20	"	"	"
9	" 27	"	"	<i>fortis</i>
10	" 28	Barr	Hersey	<i>neutralis</i>
11	Dec. 3	Littleton	Richards	"
12	" 10	"	"	"

Littleton is located ten miles due south of Denver, while Barr is eighteen miles northeast.—ROBERT B. ROCKWELL, *Denver, Colorado.*

A Death Struggle —January 18, while collecting at Newhall, California, I wounded a Lewis Woodpecker. The bird was able to fly to another tree, and I noticed that some California Woodpeckers in a nearby tree became very much excited. As the Lewis Woodpecker lit on the tree trunk four California Woodpeckers attacked him evidently with the intent of driving him off. The Lewis started for another tree but a California flew at him from in front, and they both fell in the struggle that ensued. At this the other California Woodpeckers, which were joined by a few more, set up a violent chattering and when I ran up, to my amazement I found that the Lewis had hold of the California by the skull, two of its claws entering the latter's eyes and the other two entering the skull in front and behind ! The Lewis Woodpecker was dead and the California so nearly so that it died while I was removing the former's claws.—HOWARD W. WRIGHT, *Pasadena, California.*

Albinism of Scaled Partridge.—A Scaled Partridge (*Callipepla squamata*) was brought to me November 19, 1907, by an acquaintance, who had shot it in the San Pedro valley, a few miles below Benson. The bird was an excellent example of semi-albinism. It was an adult female and had the dark edgings of the feathers, that give the species the scaled appearance in normal plumage, reduced to a minimum by a change of color. Most noticeable tho was the lack of white streaks on each side of the back, so conspicuous in the ordinary bird. The crest also was lighter than usual.

Sometime in September of the same year, Mr. O. had casually mentioned to me about wounding a "white quail," that he was unable to secure. This had slipped my mind, however; so when he handed me the specimen in subject, and remarked that he thought he had bagged his albino, it took me a few minutes to recall the incident. An ulcerated condition of the forejoint of one wing, apparent in preparing the skin, together with the fact that he had killed the bird in the same locality as the one that had escaped, would lend substance to his opinion.—AUSTIN PAUL SMITH, *Benson, Arizona.*

San Geronimo Notes.—While having a sort of *home outing*, as it were, among the firs on the back ranges of our ranch in the middle of September, 1906, with my brother, we noticed a number of Townsend Warblers (*Dendroica townsendi*), and found that quite a flock would come to feed around our camp. Several specimens were taken. These warblers often have been noted, and specimens taken, in winter and spring at San Geronimo, but all these heretofore have appeared to be single stragglers or occasional visitants. On this occasion, however, it would seem to appear as if the line of fall migration had spread out toward the coast in our locality.

On October 17, the first Yellow-headed Blackbirds (*Xanthocephalus xanthocephalus*) I have ever seen or heard of in Marin County were noted flying down the San Geronimo Valley. They came close enough for me to see that they were either young males, or adult males already in winter plumage. There is no reason why these birds should not cross thru our district, but the fact remains that they do not do so, save on rare occasions.

On October 28, 1906, the second Saw-whet Owl (*Cryptoglaux acadica*) was seen. I endeavored to add him to our collection by means of a stone, in the absence of other weapons, but my accuracy in this line seems to have lost something in the last thirty or forty years and he escaped, by a miracle(?).

A Rock Wren (*Salpinctes obsoletus*) spent the winter of 1906-7 with us, living among the rocks in a fill on the new railroad cut-off near our house. This little fellow became quite tame and would let me approach to within a few feet of him before taking flight. I was in hopes that he would find a mate and breed there, and so make a new breeding record for this valley; but in early spring he took his departure and did not return last fall. This species has only been noted as a straggler before this.

Another specimen of White-throated Sparrow (*Zonotrichia albicollis*), a female, was taken here on Dec. 11, 1907, and another of this species seen. California records of this bird are becoming quite numerous. It must either have a poor bump of direction, or be somewhat absent-minded when migrating.—JOSEPH MAILLIARD, *San Francisco, California*.

Catalina Quail.—Thru the courtesy of Mr. Howard Wright, of Pasadena, I have had the privilege of closely examining 16 more specimens of the Catalina Island Quail. Of these, ten are males and six females. They were taken at Middle Ranch, Santa Catalina Island, February 1 to 4, 1908. The series bears out precisely the characters assigned to *Lophortyx catalinensis* in the original description of that form, which was based on six skins from Avalon. (See *Auk* XXIII, July 1906, pages 262-265.) When compared with a series of the mainland *vallicola* the island birds are distinguished by larger size, especially of the feet, broadness of terminal barring on the posterior lower surface, and broadness of shaft-streaks on lower tail-coverts and flanks. An additional character which shows up in the larger series is the averaging more intense and extensive chestnut patch on the hind chest, in the male, of course. This does not seem to be due to the different "make" of the skins. An examination of individual variation in the two series shows that any one character alone is not diagnostic of every single individual. For instance, a small-footed island bird can be duplicated in that respect by an extra large-footed mainland bird. But at the same time the barring and streaking of the former renders it easily recognizable. Then in the matter of barring on the lower surface, a mainland female appears as heavily marked as the average island female. But at the same time the former has a decidedly shorter wing and weaker foot. It is therefore evident that there is a mergence of separate characters thru individual variation; and according to the criterion now apparently most popular, the island form would be given a trinomial appellation. The binomial, however, appears to me most useful, as it signifies complete isolation because of the intervention of a barrier.—J. GRINNELL, *Pasadena, California*.

The Mountain Bluebird in Northern Arizona.—The suggestion of Austin Paul Smith on page 50 of January CONDOR that the presence of *Sialia arctica* at Flagstaff, Arizona, in late February and early March might indicate that they are residents, hardly warrants that inference. The species reaches northern Colorado at about that time regularly in spring migration, spreading rapidly along the foothills at about the altitude of Flagstaff and reaching timberline (11,000 feet) by the last of March. They have been known to reach an altitude of 9,000 feet as early as February 23. Hence the Arizona record is not evidence one way or the other as to residence. However, for other reasons, some ornithologists suspect that in this latitude some few of the birds may remain in the mountains thru the winter, as in case of the robins.—JUNIOUS HENDERSON, *Boulder, Colorado*.

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

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J. EUGENE LAW, Business Manager, Hollywood, Cal.
WILLIAM L. FINLEY } Associate Editors
ROBERT B. ROCKWELL }

Hollywood, California: Published Mar. 20, 1908

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States
Mexico, and U. S. Colonies, payable in advance

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other
countries in the International Postal Union.

Claims for missing or imperfect numbers should be
made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the
Editor

Advertising Rates on application.

A NEW MUSEUM

There is shortly to be inaugurated at the University of California a new line of work, which will mean increased activity in the exploitation of California ornithology. Miss Annie M. Alexander, of Oakland, an alumnus of the University, has expressed her interest in the field of science, by providing means for the support for a period of years of a University department to be called the California Museum of Vertebrate Zoology. While this broad title has been adopted, so as to give room for future expansion, the immediate activities of those engaged in the work of the Museum will be concerned with mammals, birds and reptiles. It is proposed to have at least one party continually in the field thruout the year. The objects will be not only the accumulation of specimens from our vertebrate faunæ, but also the gathering of data on life histories, habits, and distribution, together with special ecological studies of certain localities. Miss Alexander will herself take active part in the field work, and there will be at least two others whose entire time will be devoted to the Museum's interests. The collections will be gathered with a view to providing research material of the best quality, accompanied by accurate information as to the natural conditions under which the species concerned were living. An additional feature of the new Museum will be the installation of several mounted groups of our native large mammals. It is also planned to secure material for some exhibition groups of certain birds and smaller mammals arranged to show typical associations from different

faunal areas. A building provided by the University is being planned especially for the Museum, and will be completed during the coming summer. Meanwhile preparations are in progress for active field work during the spring.—J. G.

THE REHABILITATION OF THE CALIFORNIA ACADEMY OF SCIENCES

The income building and museum building of the Academy and most of their contents burned about noon, April 18, 1906.

All of the records of the Academy, many of the insect, plant, and reptile types, a few books, and two bird specimens (the types of the Guadalupe Petrel) were saved. A number of uninjured ethnological specimens were taken from the ruins after the fire.

The restoration began without delay. On the 29th of April, 1906, the first office was secured at 1806 Post Street. Here the work of soliciting donations from the learned societies of the world was begun. American societies and several foreign, British Museum, Zoological Society of London, etc., were written to directly by the Academy. The Smithsonian Institution kindly volunteered to take up the burden of corresponding with other foreign societies. As a result of all of this work the Academy now has thru gifts over ten thousand volumes on natural history.

The Academy moved into its present temporary quarters on Gough Street, near Sacramento, on June 1, 1906. About this time the first donation to the ornithological collection was received; viz., a Yellow-billed Tropic Bird, the gift of Mr. H. W. Henshaw of the Biological Survey, who had overlooked it when disposing of his collection some years ago. After a ten years stay in the Hawaiian Islands he returned to Washington, where he found this bird among his belongings, and presented it to the Academy, stating in his letter that he felt that it was "the beginning of a great collection".

The Galapagos Expedition put the Academy "on its feet" as far as material for a new museum is concerned. This Expedition left San Francisco on June 28, 1905, returning Thanksgiving Day, 1906, with some 5000 reptiles, 38000 shells, 1000 tertiary invertebrate fossils, about 13000 insects, about 10000 plants, 8688 birds, about 2000 eggs, many nests, and about 120 mammals.

The first paper on the results of the Galapagos Expedition, and also the first since the fire, was issued December 20, 1907, and described four new tortoises. The last paper published by the Academy before the fire was issued in March, 1906.

During the past year specimens as well as books have come in steadily. Dr. J. C. Thompson, U. S. N., has sent in large collections of Philippine reptiles and insects, making the Academy's collection of the former second to none. Mr. Anderson, Curator of Invertebrate Paleontology, has secured for the Academy large numbers of Pacific Coast invertebrate fossils and shells. Mr. R. H. Beck, chief field

assistant of the Academy, collected about 2000 water birds from the ocean in the vicinity of Point Pinos. The bird collection now occupies forty-five large zinc cases, and numbers over 11100 specimens, the result of exploration and the generous gifts of kind friends.

With the work on the ten-story Class A income building on Market Street well under way, with funds in hand and plans and specifications prepared for an attractive temporary museum building to be erected in Golden Gate Park, with substantial foundations laid for a large natural history library and great research collections, the prospects of the Academy seem brighter than at any time in its history.—*Edward Winslow Gifford.*

ANNUAL MEETING OF THE COLORADO BIOLOGICAL SOCIETY

The members and friends of the Colorado Biological Society listened to a very interesting program, at the Annual Meeting of the Society which was held Wednesday evening, January 8, 1907, in the rooms of the Colorado Scientific Society, Chamber of Commerce Building, Denver.

The first address of the evening was given by Mr. L. J. Hersey, the prominent naturalist and sportsman, his subject being "Birds". His talk which covered the structure, habits, classification and distribution of bird-life was illustrated by many stereopticon views of birds and their nests and eggs.

The second address of the evening was given by Prof. C. P. Gillette of the State Agricultural College of Fort Collins. Prof. Gillette who is the leading entomologist of the state chose for his subject "Plant Lice", and the narration of the life history, food habits, peculiarities and economic features of these tiny creatures proved intensely interesting.

At the conclusion of the program an hour was devoted to informal discussions after which the meeting adjourned.—R. B. R.

EDITORIAL NOTES

The "Report of the Chief of the Biological Survey for 1907", by Dr. C. Hart Merriam, deserves the careful attention of every American citizen. The practical work of the Bureau extends to matters intimately associated with the interests of the farmer, fruit grower, stock raiser, and sportsman, and thus merits unstinted support from the utilitarian standpoint alone. And when it comes to pure science we recognize in the Survey a contributor of the larger share of our knowledge of North American zoogeography. Let us help, thru our influence with National legislators, to not only continue but augment the work of the Bureau, along the lines outlined by its chief in his Recommendations for 1909.

The Cooper Club again participates in a distinction won by one of its active members. The only election to Fellowship in the American Ornithologists' Union during 1907 was that

of Richard C. McGregor, who has been pegging away steadily at Philippine ornithology for the past five years. The honor was merited, and in behalf of the Club we extend to him our congratulations.

Miss Bertha Chapman, who has been in charge of the nature study department in the Oakland city schools for the past seven years, has received an appointment as instructor in the University of Chicago.

The "First Annual Report" of the California Audubon Society, recently issued, shows that organization to have a decidedly thrifty start. It has already done considerable work along the lines of bird protection, and a campaign is being outlined by its energetic secretary, Mr. W. Scott Way, which is sure to accomplish much further good. The movement is of a nature to elicit a very large popular support, and, as far as direct human agencies are concerned, bird-life will thru it become more and more immune from destruction. The general annihilation of the domestic cat will be about the most important achievement to work for.

Mr. Chas. A. Vogelsang, Chief Deputy of the California Fish Commission, has just returned from an extended trip in the East where much valuable data was gathered in regard to game protection and fish culture.

The plans of Mr. R. H. Beck for a 1908 expedition to the Galapagos Islands did not materialize. Instead, Mr. Beck is collecting along the coast of Lower California for the California Academy of Sciences.

Mr. Edmund Heller, assisted by Chas. H. Richardson, Jr., is engaged in field work in the vicinity of Salton, in the interests of Miss Annie M. Alexander.

Every student of California birds should send for Prof. Beal's report on the "Birds of California in Relation to the Fruit Industry", which can be had by application to the Biological Survey, Washington, D. C. While we cannot agree exactly with the conclusions in regard to some of the species dealt with (for instance, the Linnet), the data presented is of indisputable value and interest. Much biographical data is also incorporated, of interest to the general bird student.

PUBLICATIONS REVIEWED

A | MONOGRAPH | of the | PETRELS | (Order
Tubinares) | By | F. DUCANE GODMAN | D. C.
L. F. R. S. President of the British | Orni-
thologists' Union etc. etc | With Hand-col-
oured Plates | by J. G. Keulemans | In Five
Parts | Part I. | Witherby & Co. | 326 High
Holborn London | December 1907. Large 4to
(10x13 in.), pp. 1-68, pls. 1-19+5a (=20).

In excellence of typography and in careful execution of the plates, as shown by Part I,

the above-titled brochure bids fair to pass the standard set by the various other English Monographs of recent years. All the known species of Petrels, Shearwaters and Albatrosses will be dealt with in the completed work, so that for this Order of birds it becomes our standard text. The first part treats of 24 species of the Genera *Procellaria*, *Halocyptena*, *Oceanodroma*, *Oceanites*, *Garrodia*, *Pelagodroma*, *Pealea*, and *Cymodroma*. Of these the Genus *Oceanodroma* is the only one represented on the western coast of North America north of the Mexican boundary, and, moreover, it is the largest Genus, containing no less than thirteen recognized species.

Leucorhoa, *beali*, *beldingi*, *keadingi*, *macro-dactyla*, *melania*, *homochroa*, *monorhis* (=the *socorroensis* of our lists), *hornbyi*, and *furcata* are the species of *Oceanodroma* accredited to the eastern north Pacific. *O. hornbyi* continues to be known only from the type specimen now in the British Museum, and "said to have been obtained in the seas off the north-western coast of America." Mr. Godman evidently resents the action of the A. O. U. Committee in placing the species on the Hypothetical List, "as if the correctness of the habitat were not credited." But he further says, "unfortunately, after the manner of the times, no original label was attached to the specimen." However, until the species is rediscovered, it seems to us the course of the A. O. U. Committee is best followed. The lately described *O. monorhis chapmani* as well as the older *O. socorroensis* are both considered by the author as identical with the *O. monorhis* of Swinhoe, described in 1867 from China, thus giving the species an extremely wide range. Mr. Godman seems to have taken great pains in working over the literature of the subject and presenting the reader with selected biographical and exact distributional data. The beautiful hand-colored plates are perhaps the most attractive feature of the work.—J. G.

GEOGRAPHIC VARIATION IN BIRDS, WITH ESPECIAL REFERENCE TO THE EFFECTS OF HUMIDITY by C. WILLIAM BEEBE, Curator of Birds, New York Zoological Park (*Zoologica*: N. Y. Zool. Soc., Vol. I, No. 1, September 25, 1907; 41 pages, 6 figures.)

Mr. Beebe first takes up the historical phase of the subject, giving quotations from many eminent biologists who have studied geographic variation. Several of these quoted statements are diametrically opposed to one another, and the reader is left with the impression that the subject is as yet largely theoretical. The consensus of opinion seems to be, however, that humidity does affect the color of animals, those in the more humid parts of the earth being as a rule darker than those in the arid regions. Many interesting examples of

the supposed effect of humidity on coloration are cited, and these bear out well the above statement.

Dichromatism is discussed in the second division of the paper. In several cases, for instance in *Gallinago gallinago* and *Chen hyperboreus*, the dark phase is shown to inhabit a restricted and humid locality, whereas the light phase is more migratory and is widely distributed. This is also the case with the Black Hawk, the dark phase of the Rough-legged Hawk; but when dichromatism in the Jaegers is taken into account, no geographical explanation is possible, since the "distinction depends neither on age, sex, or season," and light birds frequently mate with those in the dark phase. *Felis onca*, the South American jaguar, and *Felis pardus*, the leopard of Asia, present instances of dark individuals in the more humid portions of their respective countries; in the Mountain Sheep of the western United States black individuals are frequently seen, tho moisture in this case could have nothing to do with it. In conclusion the author says that these points will be cleared up only by the study of ecological conditions surrounding the species in question, and by experimentation on individuals "with climatal factors modified."

More problems are presented by Part III, which considers the subject of sporadic melanism. Several examples are given and discussed.

Part IV and V deal with experiments carried on by Mr. Beebe himself. Three young Wood Thrushes, *Hylocichla mustelina*, were taken from a nest and brought up by hand. Two of the birds lived long enough for the completion of a satisfactory experiment. One was kept in an outdoor aviary where conditions were as nearly normal as possible, while the other was confined in a superhumid atmosphere. This bird had not quite completed its second annual molt when it died. It showed a very marked darkening of the breast and side feathers, with a "tendency toward albinism" in the primaries and rectrices, whereas the outdoor bird was to all appearances in perfectly normal plumage.

Two White-throated Sparrows were treated in a like manner. At the end of three years the plumage of the indoor bird was "melanistic to an extreme degree," while that of the other was normal.

Similar experiments carried on with *Scardafella inca*, the Inca Dove, are considered in Part V. At the outset the geographical modifications of the wild genus *Scardafella* as it is traced from Arizona and Texas south thru Mexico to Brazil are considered. When a typical *Scardafella inca* is confined six months before the annual postnuptial molt, and exam-

ined after it has taken place, a slight darkening of the new feathers is noticeable. "A radical change in the pigmentation of the plumage takes place with each succeeding molt." The darkening seems to parallel the coloration of the wild species; that is, after the first molt the bird is similar to the wild *Scardafella inca dialencos*, which inhabits Honduras and Nicaragua. Later molts bring the subject in line with *Scardafella ridgwayi* of Venezuela and Brazil. Finally it became so dark that there is no wild species with which it may be compared. In the birds experimented on a steady increase of melanin, both in the feathers and in the choroid coat of the eye, takes place until finally no white feather areas at all are left. Many wild genera of tropical doves are characterized by an iridescence of the wing coverts and inner secondaries. A remarkable feature of the color change of Mr. Beebe's subjects is the appearance of iridescence upon these feathers as a certain stage of melanin concentration is reached.

In discussing the results of his experiments, the author considers the following subjects, Significance in Respect to Direction of Evolution, Correlation with Natural Selection, Correlation with Taxonomy, and Correlation with Organic Selection.

The doves or *Columbiformes* are for the most part tropical in distribution, and it is probable that those which range farther to the north are tropical in origin. Since in these experiments the color characters assumed are progressively parallel to species farther toward the tropics, we apparently have an instance of "reversal of the direction of evolution." As the "recapitulation follows the same lines as in related genera of doves", and the details of change are identical in several individuals, Mr. Beebe decides that his work supports the orthogenetic hypothesis. He says that *acquired* and *inherited* characters should be clearly distinguished. The experiments here recorded show that the *Scardafella* specific differences are merely ontogenetic, or acquired characters.

"Mutation and natural selection have no place in these experiments." Still Mr. Beebe is led to the conclusion that natural selection is important in nature. For example, if the white color of Arctic animals is purely the result of environmental modification of pigment production "why does not the snowy owl change in summer like the ptarmigan", and why do some mammals remain dark thruout the year, while others are white at certain seasons? Natural selection probably comes continuously into play, modifying the direct climatal effect in accordance with the needs of each species. The rapid response to environment recorded in these experiments is likely to shake the ideas of "gradual evolution" and

"long-continued action of environing conditions upon the whole organism."

The writer thinks that it would be unreasonable to discard species whose distinctive characters are found to be merely acquired, for often there is a geographical hiatus between the species, and other differences, for instance in habits, would be swamped under one name.

"Any correlation of the results outlined in the present paper with the various theories of evolution must be tentative in the present state of our knowledge." This point we think should be emphasized, for when an individual of a wild species is experimented upon in confinement the fine adjustments of nature are broken down, and many subtle influences we do not now understand may be taken from it or brought to bear upon it, perhaps wholly obscuring the truly significant features. Mr. Beebe asserts that his experiments seemingly support the theory of organic selection; he gives as a possible adaptive character the presence of increased pigment in epidermal structures in a hot moist climate—adaptive in that this pigment absorbs the irritating ultra-violet rays of light. Compared with animals of the arid deserts, however, animals in the hot, moist, and therefore cloudy climates receive comparatively little light, and we should expect the former would exhibit the most abundant epidermal pigment supply! The following proposition seems justifiable, however, "if a new character, ontogenetically acquired, is in any way adaptive, it might easily be the means of preserving the species until phylogenetic variation had impressed it upon the race."

The paper constitutes one more step toward the placing of experimental biology upon a basis of importance in research work on the great problems of the science. The impression left on the reviewer, however, is that of the exploitation of the unknown rather than addition to the known.—*Walter P. Taylor.*

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

JANUARY.—The regular annual meeting for the election of officers of the Northern Division of the Cooper Club was held at the Chamber of Commerce, corner of Twelfth and Franklin Streets, Oakland, Saturday evening, January 11, 1908.

Preceding the business session Mr. Edw. W. Gifford, assistant Curator of Ornithology in the Academy of Sciences, San Francisco, spoke on "The Restoration of the Academy Collection." Mr. Gifford referred to the good fortune of the Academy in receiving the collections of the Beck Expedition after the fire, thus

forming a nucleus for the new collection. During the progress of the fire some of the skins had been removed to Mr. Loomis' residence, but unfortunately this dwelling, too, was included in the path of the flames on the following day. Only two skins of all the thousands were saved and these were two Guadalupe Petrels which Mr. Loomis thrust into his pocket as he emerged from his burning home with his household effects.

Mr. Wm. H. Hall, who had promised a talk on the birds of the Hawaiian Islands was too ill to be present so the discussion now became informal and turned on the subject of "Albinos." Some remarkable instances were elicited.

Mr. W. Otto Emerson reported an Anna Hummingbird with the plumage entirely of a dirty white color; also a Red-winged Blackbird entirely white except the tail which was of the usual glossy black, making a startling contrast. Another instance was that of an Oregon Towhee flecked with white suggesting to the observer an advanced stage of a progressive disease.

Dr. D'Evelyn cited an instance of a partial albino English Sparrow that came under his observation in Union Square, San Francisco. He also remarked that in practical aviculture albino parents never produce albino offspring.

Mr. J. S. Hunter spoke with admiration of a white crow and Mr. Emerson, not to be outdone, offered a record of a nest of five California Jays, all white, also two broods of English Sparrow of five and six respectively all albinos in the nest, refuting the theory suggesting an analogy between the albino and the human being with whitened hair attendant upon some nervous shock.

Dr. D'Evelyn called attention to a mounted specimen of the Kiwi in a store window on Fourteenth street, between Washington and Broadway, Oakland. This species is the *Apteryx oweni*, found on the South Island of New Zealand, but only in very remote districts.

The business session being opened, a roll-call showed the following members present: H. W. Carriger, D. A. Cohen, Dr. F. W. D'Evelyn, W. O. Emerson, Edw. W. Gifford, J. S. Hunter, Milton S. Ray and R. S. Wheeler.

The following elections by the Southern Division were confirmed: R. Magoon Barnes of Lacon, Ill., Dr. T. W. Richards, U. S. S. Kansas, care Postmaster, New York, N. Y., Robert B. Rockwell, Denver, Colorado, B. R. Bales, M. D., Circleville, Ohio, Jesse C. A. Meeker, Danbury, Conn.

Mr. Milton S. Ray proposed the name of Oluf J. Heinemann, 1532 Fulton Street, San Francisco, for membership. It was voted that an expression of the thanks of the Northern Division be tendered the former business manager,

Mr. Clifton, and the Chair appointed Messrs. Cohen, Emerson and Wheeler to draft the same.

After a vote of thanks to the retiring president and Secretary the club proceeded to the election of officers with the following results: President, Dr. Fred. W. D'Evelyn of Alameda; Senior Vice President, W. O. Emerson of Haywards; Junior Vice President, Edw. W. Gifford of Alameda; Secretary, J. S. Hunter of San Mateo.

In accordance with certain provisions of the constitution the President appointed as the editorial staff of THE CONDOR for the ensuing year the same gentlemen who served during the past year.

The Oakland Chamber of Commerce was selected as the official headquarters of the Northern Division. Adjourned.

ROSWELL S. WHEELER, *Secretary*.

SOUTHERN DIVISION

DECEMBER.—The December meeting was called to order by President Morcom in the Faculty room, Throop Polytechnic Institute, Pasadena, Cal., Friday evening, December 27, 1907, with members Geo. Willett, O. W. Howard, C. B. Linton, Chas. W. Metz, Howard Wright, Chas. Richardson, Jr., and J. Eugene Law present.

The minutes of the last meeting, November 27, 1907, were read and approved.

On motion by Mr. Howard, seconded by Mr. Wright and duly carried, the Secretary was instructed to cast the unanimous vote of those present electing to active membership Louis Agassiz Test, C. O. Esterly and Robert B. Rockwell, the latter subject to the approval of the Club-at-large owing to his non-residence in the state.

Applications for membership were presented as follows: W. M. Peterson, Neah Bay, Washington, by M. F. Gilman; Miss Myrtle E. Johnson, National City, Cal., by Prof. Wm. E. Ritter; Lester Black, Long Beach, Cal., by C. B. Linton; and Pingree I. Osburn, Pasadena, Cal., by Chas. H. Richardson, Jr.

On motion by Mr. Howard, seconded by Mr. Willett and duly carried, the resignation of M. L. Wicks, Jr., was accepted.

On motion by Mr. Willett, seconded by Mr. Howard and duly carried, the Secretary was instructed to cast, separately for each officer, the unanimous ballot of those present, electing as officers for 1908, those nominated at the December meeting, viz.: G. Frean Morcom, President; H. J. Lelande, Vice-President; W. Lee Chambers, Treasurer; and J. Eugene Law, Secretary.

This records the formal meeting and the business transacted, but it would be hard to record the hours of pleasurable and instructive orni-

thological chat that occupied the evening before and after business. Adjourned.

J. EUGENE LAW, *Secretary*.

JANUARY.—The January meeting of the Southern Division met with Dr. F. M. Palmer in his offices at 371 Huntington Building, Los Angeles, Cal., Thursday evening, January 30, 1908, with members L. A. Test, C. O. Esterly, Jos. Grinnell, O. W. Howard, H. T. Clifton, Willard Chamberlain, Howard Wright, Arthur Howard, Wilson C. Hanna, Chas. H. Richardson, Jr., C. E. Cosper, C. B. Linton, Lester Black, W. Lee Chambers, Virgil Owen and J. E. Law present. In the absence of the President and Vice-President, Mr. Clifton was made chairman for the evening.

On motion by Mr. Cosper, seconded by Mr. Owen and duly carried, the Secretary was instructed to cast the unanimous ballot of those present electing Miss Myrtle E. Johnson, National City, Cal., Mr. Lester Black, Long Beach, Cal., and Mr. Pingree I. Osburn, Pasadena, Cal., to active membership, and Mr. W. M. Peterson, Neah Bay, to active membership subject to the approval of the Club-at-large.

The following applications were presented for active membership: Arthur deC. Lowerly, Anglo-Chinese College, Tientsin, China, by Malcolm P. Anderson; Alfred Brazier Howell, Catonsville, Maryland, by H. W. Marsden; and J. M. Davis, 1438 Seventh Street, Eureka, Cal., by H. F. Duprey.

On motion duly carried, the resignations of Mr. W. Scott Way and Mr. E. Crawford May were accepted, their dues having been paid to date.

Two interesting letters from Malcolm P. Anderson, now collecting in China, were read, telling of his successes and hardships in that field.

Dr. F. M. Palmer in a short talk outlined the plans for a distinctly southwestern museum in southern California. This plan has progressed so far that a site comprising something over 35 acres has been purchased and largely paid for. The Archeological Society already has as a nucleus for this museum its very fine collection of archeological specimens, many of which are almost unique, and are of great scientific value. Dr. Palmer suggested the cooperation of the Cooper Ornithological Club in the directing and establishing of the ornithological branch of the museum, and hoped that in some way not yet figured out, this might be accomplished. On motion by Mr. Grinnell, seconded by Mr. Owen and duly carried, the chairman was instructed to appoint a committee of three, to consider these suggestions and report at a future meeting. Messrs. Grinnell, O. W. Howard and Law were appointed as this committee.

Mr. Grinnell then gave us a brief outline of

his recent trip of inspection thru the eastern museums. In a trip covering five weeks in December and January, he visited the Chicago, Washington, D. C., Philadelphia, New York and Boston Museums, and met a large number of the ornithologists of these centers. An hour went quickly in this rapid outline, and we were given "inside touches" on all these museums. Of special interest were the accounts of the Field Museum, The American Museum of Natural History, and the Thayer Museum. Adjourned.

J. EUGENE LAW, *Secretary*.

FEBRUARY.—The February meeting was called to order by President Morcom at Faculty Room, Throop Polytechnic Institute, Pasadena, Cal., Thursday evening, February 20, 1908, with members John Lewis Childs, O. W. Howard, Geo. Willett, Jos. Grinnell, Loye Holmes Miller, L. A. Test, C. O. Esterly, H. T. Clifton, C. B. Linton, C. E. Cosper, Walter Taylor, Chas. Richardson, Jr., Howard Wright, Pingree I. Osburn, Chas. W. Metz, Willard Chamberlain and J. E. Law present, and as visitor Mr. W. S. Wright of Pasadena.

The minutes of the December, 1907, and January, 1908, meetings were read and approved.

On motion by Mr. Willett, seconded by Mr. Cosper and duly carried, the Secretary was instructed to cast the unanimous ballot of those present, electing to active membership subject to the approval of the Club-at-large, Alfred Brazier Howell, Catonsville, Maryland, and J. M. Davis, Eureka, Cal.

Mr. Childs gave a short talk in which he expressed his interest in the activity of the Cooper Club and his pleasure at being able to meet with it from time to time.

Mr. Grinnell read a paper on certain problems of bird population, calling the Club's attention to the comparative stability in numbers, i. e., that apparently the death rate equaled the birth rate. This, he showed by illustrations and observations, was primarily due to food supply conditions, and that apparently any given species was limited in numbers to those that could find food supply in the season of least food production. In other words, any given locality held as many individuals as could exist in that region in the period of least abundance of the particular food the individuals lived on, and that in this season of least abundance, the bird population of any given species is reduced to the average number thru the death of those members not able to compete in the strife for existence.

Mr. Grinnell suggested that the Club acquaint itself meanwhile with, and at the next meeting discuss, Prof. F. E. L. Beal's recent paper on the "Birds of California in Relation to the Fruit Industry." Adjourned.

J. EUGENE LAW, *Secretary*.

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THE CONDOR

A Magazine of Western
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Volume X

May-June, 1908

Number 3



W.K.P.

COOPER ORNITHOLOGICAL CLUB

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Entered as second-class matter February, 1908, at the post office at Los Angeles (Hollywood Station), California, under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, First National Bank Building, Hollywood, Cal.

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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume X

May-June 1908

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THE PRESENT STATE OF THE ORNIS OF GUADALOUPE ISLAND

By JOHN E. THAYER and OUTRAM BANGS

IN the spring of 1906 Mr. W. W. Brown, Jr., accompanied by Mr. H. W. Marsden and Ignacio Oroso, made a collecting trip of two months—May 1 to June 28—in Guadaloupe Island, gathering material for the Thayer Museum at Lancaster, Massachusetts.

We had planned to have Mr. Brown arrive in Guadaloupe much earlier in the season than he did, but owing to the new marine law by which the Mexican Government prohibits all but vessels flying its own flag from visiting the island, his trip thither was long delayed. There are very few Mexican vessels to be had at any price, and to be on time to keep a prearranged appointment is apparently one of the least of the troubles of a Mexican skipper. When the party arrived at Guadaloupe May 1, the breeding season of the rock wren, the kinglet, the house finch and the junco was passed, and the only eggs secured were those of the petrel and the flicker.

Since its ornis was first made known in 1875, through the work done there by Palmer, Guadaloupe has many times been visited by good ornithologists, Bryant, Anthony, Streater and Beck all having made collections there. Much has already been published concerning it, probably the best description of the island and account of its birds being that of W. E. Bryant (Bull. Cal. Acad. Science, No. 6, 1887). We, however, feel that, even at the risk of what may seem useless repetition, a short description of the island is necessary, in order to make clear the distribution of the birds found there by Brown and Marsden. Furthermore as this is taken from Brown's carefully prepared notes, without it we could scarcely show the changes that are taking place and the present condition of the biota of the island, facts certainly worth recording, especially when it is generally known with what alarming rapidity the destruction of that highly interesting endemic biota, due to the introduction of goats and cats, is taking place. Already many

plants and three birds are gone and others are reduced to very small numbers, and the whole island seems threatened in the near future with absolute desolation—doomed to become a barren rock.

GUADALOUPE ISLAND

Guadaloupe Island, the northern end of which lies about 160 miles southwest from San Antonio point, Lower California, is about 20 miles long and from 3 to 7 miles wide. It is of volcanic origin, and is traversed throughout its entire length by a chain of mountains, the highest of which is some 4500 feet above sea level. The western and northern sides of this range slope rapidly toward the ocean, ending in many places in high perpendicular cliffs. Toward the south the slope is more gradual and ends less abruptly. The southern part of the island, which is lowest, is rocky and barren, and during May and June, 1906, was a sun-burned waste with hardly a leaf of living verdure.

At the northern end of the island extending along a narrow ridge, and in some places down its perpendicular face is a fast decaying pine wood. No young trees appear anywhere and the old ones are gradually falling, the ground being strewn with decaying trunks. This end of the island is of about 3000 feet altitude. Much of the time it is enveloped in heavy fog, and on such occasions a splendid example of the power in these trees of gathering and condensing moisture is afforded. Under the pines water will be pouring in streamlets from the base of the trunks, while the surrounding open country is hardly wet by the fog. Formerly when the whole northwestern part of the island was covered with a dense pine forest, springs must have been more numerous and conditions very different. Most of the higher parts of the island are open, rocky table land, but near the very highest point, north of Mt. Augusta, is a large cypress wood, occupying an area of nearly three square miles. The eastern edge of this large cypress grove ends abruptly at a ridge below which is another much lower table land. Upon this is a second but very much smaller grove of cypress with several springs and pools of water, more or less alkaline, near by. Here Brown and Marsden made their camp. Among the cypresses of both groves there are numerous dried stumps of some shrub now extinct in Guadaloupe. No young trees could be found in or about the groves, and most of the old trees show the marks of the teeth of goats, and many are dying. Far down the northwestern slope there is a large grove of cabbage palms, and another smaller one near Steamer Point on the west shore. Among the palms are a few fine oaks, from 30 to 65 feet in height, and under a cliff east of the cabins several stunted ones that branch very low down like shrubs.

The juniper is gone; numerous dried stumps told, however, where in the past a grove of this tree had stood.

The vegetation of the island in May and June consisted of wild oats, foxtailed grass and cactus plants, and in the region of the old corrals, a species of *Malva* grew in profusion. Other plants, with very few exceptions, were seen only here and there clinging to the almost perpendicular cliffs.

The climate of the island, in spring and early summer at least, is cold and raw with much fog at the northern end. High winds, almost gales, blew from the northwest much of the time, making collecting along the north ridge well nigh impossible. On such days Brown and Marsden would resort to the large cypress grove on the high table land and once inside this wood no matter how hard it blew without, not a breath would be stirring, so perfect is the protection afforded by the closely growing cypress trees.

The domestic goat and cat turned loose upon the island many years ago, are

of course responsible for the destruction of its flora and ornis. Brown and Marsden estimated the numbers of the goat to be between six and eight thousand. It eats up every growing thing. All shrubs have long been exterminated and not a young tree, palm, oak, pine or cypress can be found in the island. The cat is also very numerous and undoubtedly has caused the extinction of two of the island's native birds—the towhee and the Guadaloupe wren—while the rock wren, junco, flicker and petrel, suffer much from its depredations. The house mouse (*Mus musculus*) has become established in Guadaloupe and is exceedingly abundant, but it probably does but little harm, while it undoubtedly furnishes the main diet of the burrowing owl and sparrow hawk.

Guadaloupe is at present uninhabited by man.

LIST OF BIRDS SEEN OR TAKEN BY BROWN AND MARSDEN

Diomedea nigripes Aud. Seven specimens, adults of both sexes, were taken at sea near the island, on June 27 and 28.

Puffinus opisthomelas Coues. Three specimens were taken in June. Mr. Brown says of this shearwater—"this species was abundant at night about the perpendicular cliffs east of our cabins, on the lower tableland, their cries resounding throughout the night. At day they frequented the waters off the extreme northern end of the island. From the high cliffs they could be constantly seen skimming over the ocean 1,000 feet below; often there were from forty to fifty in sight at one time.

"Along the top of the bluffs we found the remains of three or four that had been killed by cats. The bird almost certainly breeds in the rocky crevices of the bluffs, but we could not prove this, as the perpendicular cliffs are inaccessible.

"On our return trip from Guadaloupe shearwaters of this species were constantly in sight. Off the bar at San Quintin there were thousands upon thousands of them—I think I never before have seen so many birds at one time."

Puffinus griseus (Gmel.). Two specimens were taken at sea near Guadaloupe in June.

Oceanodroma macrodactyla Bryant. A series of a dozen adults and three young in the down was taken between the dates of May 28 and June 17, and one egg May 28.

Mr. Brown's notes on this species are as follows: "This species was abundant at night about its nesting burrows on the pine ridge at the northern end of the island. Most of the burrows that we opened were empty, the breeding season being about over; three, however, contained one young one each, and one, one egg.

"The burrows were of various lengths and usually led between or under heavy fragments of rock, making it very difficult, in many cases impossible, to reach the end. We found no adult birds in the burrows. After the young are hatched the old birds appear to come in only at night to feed them. The one egg we secured was in a deserted burrow fifteen inches long, and lay in a somewhat enlarged depression at the end. It was white with a faint wreath of reddish brown specks at the larger end.

"The mortality among these birds from the depredations of the cats that overrun the island is appalling—wings and feathers lie scattered in every direction around the burrows along the top of the pine ridge. The species, however, is still breeding in large numbers in Guadaloupe, and sometimes at night the air seemed to be fairly alive with petrels, their peculiar cries being heard on all sides."

Phalacrocorax sp. "Two cormorants were several times seen off the southern

end of the island. They were very shy and we were unable to secure either of them."

Buteo broealis calurus (Cass.). Three fine specimens taken by Brown and Marsden prove that the red-tailed hawk of Guadalupe is true *B. borealis calurus*.

Mr. Brown says of it: "A few pairs frequented the high pine woods of the north ridge. Although we searched very carefully we found no nests either in the pines or the cypresses and I think they must breed along the precipices."

Cerchneis sparveria phalæna (Lesson). Fourteen skins, young and adults, May 13 to June 19. These do not differ from specimens from northern California and elsewhere on the mainland within the range of the subspecies.

Mr. Brown writes that the sparrow hawk is "tolerably common in Guadalupe and very shy. Its food consists chiefly of mice (*Mus musculus*) but it also catches and eats house finches, juncos and rock wrens. They nest along the cliffs. Young fully able to fly were about by June 10."

Heteractitis incanus (Gmel.). One male, in unspotted plumage, was taken May 5. It was alone on the beach near the landing, feeding among the rocks almost in the surf.

Crymophilus fulicarius (Linn.). One female, taken June 27. This is a late date upon which to find the red phalarope so far south, and the bird was probably a stray.

Larus occidentalis Aud. One adult female, taken May 4. Mr. Brown says "a flock of about ten individuals lived on and about the beach near the landing, and others were seen at the southern end of the island. I think they nest on the shelves of the perpendicular cliffs."

Ptychoramphus aleuticus (Pall.). One female was taken June 28. Mr. Brown's notes say of this species: "A few were constantly seen at sea off the southern end of the island, and on shore we found a number of dead ones rolled up above the surf."

Micruria hypoleuca (Xantus). Two females were taken at sea off Guadalupe June 27. One of these was moulting its primaries and was unable to fly.

Speotyto cunicularia hypogæa (Bp.). *Speotyto cunicularia becki* Rothschild and Hartert, Novit. Zool., Vol. IX, p. 405, July 1902: Guadalupe Island.

Twenty-seven specimens, young and adults, May 6 to June 17.

The burrowing owl of Guadalupe is absolutely indistinguishable in any way from the subspecies *hypogæa* of the mainland. Mr. E. W. Nelson also reached this conclusion several years ago, when he compared with mainland specimens, the large series from Guadalupe then in the collection of the California Academy of Sciences.

Mr. Brown's notes on the burrowing owl are as follows: "Very common in the high, open, rocky country of the tablelands, but not found in the pine or cypress woods. It is mostly nocturnal in its habits, though several times I saw it hunting grasshoppers during the day. We found several nests in holes among the rocks, all containing young nearly full grown. One nest in which there were five young birds, contained, besides, eighteen freshly killed mice and the remains of many others. While mice seem to be its chief diet, I found in the stomachs of some of the ones I skinned remains of beetles and grasshoppers. Its cry, which is not unpleasant, is always to be heard on dark nights mingled with the voices of petrels and shearwaters."

Colaptes rufipileus Ridg. A series of skins was secured on dates ranging from May 6 to June 19, and six sets of eggs May 8 to June 8.

This well-marked island form is in all probability doomed to speedy extinction,

and will be the next of the Guadaloupe birds to go. Brown and Marsden found in all not more than forty individuals in the island. In the small cypress grove near the cabins there were four and in the large cypress woods about thirty-five.

Mr. Brown tells us that in the breeding season, at least, the species is wholly confined to the cypresses, none being seen in the pine woods. The bird is very tame and unsuspicious and falls an easy prey to the cats.

The six sets of eggs taken may be described as follows:

Set 1. May 8, 1906. Eggs fresh, in an old cypress stump, 4 feet from ground; altitude 4500 feet.

Set 2. May 18, one egg and three young.

Set 3. May 20, one egg, nest in a dead cypress 10 feet up, hole 18 inches deep, 4 inches wide.

Set 4. May 20. Four eggs, nest in an old cypress 5 feet from ground; altitude 3700 feet.

Set 5. May 24. Four eggs, nest in a cypress four feet from ground, hole 20 inches deep, 3½ inches wide; altitude 4000 feet.

Set 6. June 8. Five eggs, nest in a cypress 15 feet from ground, hole 2 inches deep and 4 inches in diameter.

Trochilus anna (Less.)? Early in June Mr. Brown saw a hummingbird he felt sure belonged to this species. Early one morning after a severe northwest storm that had lasted for several days, the bird flew past him along the edge of the bluffs of the lower tableland and disappeared. It was the only hummingbird seen in the island.

Regulus calendula obscurus Ridg. A good series was secured on dates ranging from May 13 to June 11, most of those taken being males. Mr. Brown found the species restricted to the large cypress wood, and in small numbers, noting in all about thirty-five individuals. The breeding season was passed, as young on the wing were seen. The males, however, were still singing, and Mr. Brown characterizes the song as "indescribably sweet; in fact I have seldom heard its equal, and given as it always is in the silent gloomy depths of the cypress woods of Guadaloupe, it is ever to be remembered."

Salpinctes obsoletus guadeloupensis Ridg. A large series was secured, on dates from May 1 to June 8.

Next to the house finch, the rock wren is the commonest bird of Guadaloupe, and occurs all over the island from sea level to the highest peaks and in every kind of country, from the rocky beach, the cliffs, and the grassy plateau to the high wooded region. It is very tame and confiding, and Mr. Brown has several times, when standing or sitting still, had one hop onto his shoe or even upon his knee and look him over with evident curiosity.

Nests found as early as May 8 contained young. In the open country the nest is placed in crevices in the rocks and in the cypress woods in hollows in the decaying, prostrate cypress trees.

Sitta canadensis Linn. A suite of skins taken from May 13 to June 11, shows the resident breeding nuthatch of Guadaloupe to be quite the same as the bird of continental North America generally.

It is very local in Guadaloupe being confined to the pine woods of the north ridge. Mr. Brown thought about fifty individuals made their home in this desolate, wind-swept wood that is about 3000 feet above the sea and is almost constantly buried in fog. It was never seen in the cypresses or the palm woods. All the specimens taken were adult and no sign of nesting was observed.

Carpodacus amplus Ridg. A large series of specimens, including young and

adults, taken from May 1 to June 18. Many adult males in this series are in the yellow phase of plumage.

The house finch is by far the commonest bird of the island. Mr. Brown has sent us the following account of it: "On our arrival—May 1—well grown young were about with the old birds, and at that time the house finches were scattered about in large numbers all over the island. On the cliffs and about the rocks near the landing there were several hundred of them. Late in June they gathered in flocks and all left the lower altitudes, even those, some thirty or forty, that had been living about our cabins. Empty nests were found in a variety of situations, in the pines and cypresses, in cactus plants, and in crevices in the rocks. Their food seemed to consist chiefly of grass seeds and insects, but the birds that lived near our cabins were very partial to goat meat and made our meat-shed their headquarters."

Junco insularis Ridg. A large series, including young and adults, was taken from May 4 to June 18.

The Guadalupe junco, a very tame, confiding little bird, is fairly abundant throughout the island, though more numerous at high altitudes—in the cypress groves, the pine woods and among the oaks. A few, however, breed down even to sea level. One pair was feeding its young among the rocks on the beach at the landing.

At the time of Mr. Brown's arrival—May 1—full grown young were about. One nest only in which there were still young birds, four in number, was found. This was placed on a lower branch of a pine, was bulky and made mostly of dried grass stems.

BIRDS PROBABLY NOW EXTINCT

Polyborus lutosus Ridg. When Beck visited Guadalupe in 1900-1901 the Caracara still occurred in the island, though probably in small numbers. It appears now to be entirely extinct. During two months spent in Guadalupe by Brown and Marsden the island was ransacked from end to end, but no trace of the caracara could be found.

Goats were killed and left at various points on the island, especially upon the high, open tableland, where the caracaras, had there been any, must have detected them, but nothing came to any of the many carcasses that were thus exposed.

Thryomanes brevicaudus Ridg. Writing in *THE CONDOR* in May, 1901, A. W. Anthony gave it as his opinion that the Guadalupe wren was extinct. It undoubtedly is, Brown and Marsden hunting in vain every spot where it might possibly have survived.

Pipilo consobrinus Ridg. In the same article in which Anthony refers to the Guadalupe wren as "among those that were", he mentions the towhee, saying that it is "now nearly or quite extinct." Unfortunately there can no longer be any doubt of the complete extermination of this strongly characterized island species. If there had been a living individual, we feel sure it could not have escaped the close scrutiny of two such experienced field collectors as Brown and Marsden, who searched the whole island for two months, the towhee being one of the birds they especially sought.

Boston, Massachusetts.

SOME FALL, MIGRATION NOTES FROM ARIZONA

By HARRY S. SWARTH

LAST September, in response to the cordial suggestion of Mr. James H. Ferriss, of Joliet, Illinois, that I accompany him on a trip to some of the mountain ranges of southern Arizona, I gladly availed myself of the opportunity, and so had an exceedingly enjoyable six weeks in the field. There were three of us in the party, Mr. Ferriss, Mr. L. E. Daniels of Laporte, Indiana, and myself. Mr. Ferriss and Mr. Daniels devoted themselves to land shells and ferns, while I, though most interested in birds, collected also what mammals, reptiles, and insects I could. Leaving Chicago the evening of September 18 we arrived at Benson, Arizona, early in the morning of Saturday, September 21. Saturday was taken up in the various necessary preparations, including arrangements for transportation; and early the next morning we started for the Rincon Mountains, some twenty-five miles to the northward, arriving at "Happy Valley" about dusk, after traveling all day over tiresomely rough, rocky roads. We were camped in a broad, but very rough and uneven valley, grown over with underbrush, and with but few large trees except along the bed of the main stream; intersected by countless deep-cut gullies running from the higher hills to the stream in the center of the valley. To reach the pine woods of the higher altitudes entailed an exceedingly arduous climb, one of such length as to render it hardly possible to return to camp the same day. The Rincos proved disappointing in respect to animal life. There was an abundance of vegetation, and plenty of water, but birds and mammals were remarkably scarce; so, after a week of hard labor, with but little to show for it, an opportunity presenting itself, we decided to return to Benson and make a fresh start. From there we went to the Huachuca Mountains, arriving on the evening of September 30. We intended to make but a short stay there, but, the mountains proving fruitful in snails and plants, as well as in birds, kept delaying our departure; and when my companions finally decided to move on to the Chiricahuas, on October 28, I thought it best to remain where I was for the brief remainder of the time at my disposal, and did so, starting for home on November 8. During most of the trip the weather was pleasant, except for one or two rainstorms, but toward the end of October the nights became quite cold, and the first week in November there was snow in the higher parts of the mountains.

My excuse for the following list is that it is, in a measure, supplemental to and rounds out my previously published account of the birds of the Huachuca Mountains (Pacific Coast Avifauna, No. 4, 1904). I kept track rather carefully of the migration that was in progress, and am consequently able to give dates of departure of many species. In a number of cases I have also given dates of arrival, as already published in the above mentioned paper, so as to have in one place a statement of the time when the species may be looked for in the region.

I had never collected here in the late fall before, and found much of interest in the movements of the birds, while in several instances I was obliged to revise my previous convictions as to the manner of occurrence of certain species. Thus I had always supposed *Corvus cryptoleucus* to be a resident in this region, as it certainly is not during the winter; while most surprising of all to me was the total absence of the Western Robin (*Planesticus migratorius propinquus*) from the Huachucas, where always before I had found it in abundance at all times from February to September. There was plenty of food, for the bushes were loaded with

berries of various kinds, but the Robins were gone, where, or why, it is hard to say.

Lophortyx gambeli. Gambel Partridge. From Benson to the foothills of the Rincon Mountains this species was seen in the greatest abundance. Though so common around Benson, it ranges in the valley of the San Pedro River hardly more than twenty miles or so south of that place, at least in any abundance.

Callipepla squamata. Scaled Partridge. None were seen in the Rincon Mountains, though the ground was of a character that should be suitable to the species. As we traveled south from Benson on the train many flocks of Scaled Quail were seen along the San Pedro River, while the Gambel Quail was no longer observed.

Cyrtonyx montezumæ mearnsi. Mearns Partridge. Abundant in the Huachucas, where they were seen from the base of the mountains (about 4,000 feet) up to the divide (about 9,000 feet). One flock was seen in the Rincon Mountains.

Columba fasciata. Band-tailed Pigeon. A small flock was seen in the Rincons September 22, the only ones observed in this region. In the Huachucas also, but few were seen, and they lessened in numbers during the whole of our stay, until by November 1 hardly one was to be found. An old bird was observed feeding a young one on October 12. Nearly all that were seen were unusually tame and unsuspicious.

Zenaidura macroura. Mourning Dove. During the winter months the Mourning Dove appears to leave this region almost entirely; for a few stray birds seen in the Rincons on various occasions, and one or two observed in the foothills of the Huachucas, were all that we came across.

Cathartes aura. Turkey Vulture. A good many were seen in the vicinity of Benson the latter part of September, but they had already disappeared from the Huachucas. Not one was seen during the whole of our stay in that range.

Circus hudsonius. Marsh Hawk. Several birds seen along the San Pedro River on November 8 were the only ones observed.

Accipiter velox. Sharp-shinned Hawk. Early in October this species was seen in considerable numbers, evidently migrating, for a few weeks later but few of the birds could be found.

Accipiter cooperi. Cooper Hawk. A few were seen in the Rincons, while in the Huachucas, during the first two weeks in October, they were exceedingly abundant. There were a great many chickens and pigeons on the ranch where we were staying, and during that time there was not a day on which at least one Cooper Hawk did not make an attempt on the poultry yard. Nearly all of these marauders were immature birds, and I did not see one succeed in carrying anything away with him, as they seemed to become confused at the uproar they invariably stirred up. They were so quick and unexpected in these attacks though, that not one was shot in the act. Toward the end of October their numbers were greatly lessened, and it was evident that nearly all had passed on further south.

Buteo borealis calurus. Western Red-tail. Quite common in the Huachucas from base to summit, and as a rule, tame and unsuspicious. In the foothills they were frequently seen hunting the common "ground squirrel" of the region (*Citellus grammurus*). On the morning of October 21 a hawk made an exceedingly ill-advised and abortive attempt on the chicken yard, and his strange appearance made me start in pursuit. I secured the bird, and at the time was puzzled to know what it was, but it is evidently an immature *calurus* in exceedingly dark plumage. The whole bird is uniform dark brown, decidedly glossy on the back, and with most of the feathers of the lower parts edged with paler brown. The upper breast

is uniform with the rest, and does not form a lighter brown spot, as I have seen in some adults in this phase of plumage. There is no trace of red on the tail.

Buteo swainsoni. Swainson Hawk. While travelling west from Chicago a great many Swainson Hawks were seen from the car window on September 20, in eastern New Mexico and western Texas. They were observed at quite a high altitude, 5000 to 6000 feet, and the air was decidedly frosty; so it seemed the more strange to find that they had entirely left their summer home on the "Huachuca Plains" before we reached there. There was an abundance of food for them in the shape of grasshoppers, but the hawks had all gone.

Aquila chrysaetos. Golden Eagle. On October 26 I secured a fine old male Golden Eagle on the extreme summit of Carr Mountain, the second highest peak in the range. He had not quite finished his fall moult, a few old feathers remaining in the lesser wing coverts, and a few pin feathers on the dorsum, while an old tail feather showed that the immature plumage had not been worn during the previous year at any rate. Eagles were seen almost daily during our stay in the mountains, most frequently toward the top of the range. Several were observed in the Rincons.

Falco peregrinus anatum. Duck Hawk. On September 30, as I sat on the veranda of the hotel at Benson, waiting the arrival of the train, a Duck Hawk passed directly over me, not thirty yards distant, quite close enough for me to see that it was an old bird, from its size probably a female. This was the only one of the species seen on the trip.

Falco columbarius. Pigeon Hawk. A single bird in the beautiful blue plumage of the fully adult male was secured on October 30, on the open prairie below the Huachucas. Another, probably of the same species, was seen on October 24. The Pigeon Hawk appears to be of quite rare occurrence in the region, this being the only one I have secured. I have never seen *Falco richardsoni* at all, though it also certainly should occur.

Falco sparverius phalena. Desert Sparrow Hawk. Not nearly as common as during the summer months. Seen in the foothills and out on the plains, but not high up in the mountains. A male bird secured on October 16 was still in the midst of the moult.

Syrnium occidentale. Spotted Owl. Heard calling on several occasions in the higher parts of the Huachucas. None were seen and no specimens secured.

Megascops asio cineraceus Ridgway. Mexican Screech Owl. Screech Owls were frequently heard calling in the evenings around our camp in the Huachucas, sometimes three or four answering each other from different points in the woods. *Cineraceus* is the common screech owl of this region, tho *flammeolus* and *trichopsis* also occur, and it is very possible that more than one species contributed to these nightly concerts; there was variety enough of sound for a dozen. No specimens were secured. A few, but very few, were heard in the Rincons.

Bubo magellanicus pallescens. Western Horned Owl. Quite common in the Huachucas, frequently seen in the daytime, and heard calling almost every night. I was often directed to them by the blue jays, the commotion stirred up when the jays found an owl being audible a long ways from the center of the disturbance.

Speotyto cunicularia hypogæa. Burrowing Owl. One or two were seen in the colonies of prairie-dogs (*Cynomys arizonensis*), a few miles below the Huachucas.

Geococcyx californianus. Road-runner. Frequently seen in the foothills of the Huachucas. Most of the birds observed were singularly tame and unsuspicious.

Dryobates villosus hyloscopus. Cabanis Woodpecker. Sparingly distributed

through the higher parts of the mountains, from about 6000 feet upwards. Not observed in the Rincons.

Dryobates scalaris bairdi. Texas Woodpecker. Fairly common in the foothill region of the Huachucas, while a few were seen in the Rincon Mountains also. They are less dependent on the presence of large timber than most of the woodpeckers, and may frequently be seen feeding in the "greasewood" and on the flat-leaved cactus (*Opuntia*), sometimes a long way from trees.

Dryobates arizonæ. Arizona Woodpecker. Fairly common in the live-oak region in the Huachucas, and seen also in the Rincons. A male bird secured in the latter place on September 27 has one or two faded brownish feathers on the upper part of the dorsum, remnants of the old plumage, while in another secured October 1 the outermost primary has not acquired its full length. The molting period thus extends over quite a long period of time, from the middle of July to the first of October.

Sphyrapicus varius nuchalis. Red-naped Sapsucker. The first one seen, a female, was secured in the Rincon Mountains on September 27, several more being observed the following day. When we reached the Huachucas, October 1, the species was fairly abundant, and remained so the whole of our stay. It probably remains in the mountains throughout the winter.

Sphyrapicus thyroideus. Williamson Sapsucker. A single specimen, a female, taken in the Huachucas, at the head of Miller canyon, about 9000 feet on October 26, was the only one seen.

Melanerpes formicivorus aculeatus. Mearns Woodpecker. One of the most abundant species in the Rincons and in the live oak regions of the Huachucas. In a specimen taken on October 15 the exposed portion of the primaries is already beginning to fade to a dull brown.

Centurus uropygialis. Gila Woodpecker. A few were seen in the Rincons and in the foothills of the Huachucas, but it was not common in either place.

Colaptes cafer collaris. Red-shafted Flicker. By far the most abundant species of bird in the Rincon Mountains at the time of our visit. They were feeding on the wild grapes which grow in the greatest profusion in that region. Flickers were fairly abundant in the Huachucas also.

Phalænoptilus nuttalli. Poor-will. The Poor-wills had nearly all left the mountains when we arrived, and only one or two were heard calling. A bird flushed on a rocky hillside near the base of the Huachucas on October 23 was the last one noted.

Aeronautes melanoleucus. White-throated Swift. This species was observed on only one or two occasions, but is probably apt to visit the mountains at any time in the winter, as it is unquestionably a resident in the warmer parts of the territory, not so very many miles away.

Trochilus alexandri. Black-chinned Hummingbird. A few hummingbirds, not over three or four all told, probably of this species, were seen in the Rincon Mountains during the last week in September. This identification is not positive, as all that were seen were females, and none were secured.

Selasphorus platycercus. Broad-tailed Hummingbird. Three or four were seen, or heard flying by, in the Huachucas, the last being observed on October 3. The earliest date on which I have noted the species in these mountains is February 28 (1903).

Tyrannus verticalis. Arkansas Kingbird. A few were observed in the Rincons during the last week in September, but by the time we reached the Huachucas they had already departed.

Sayornis nigricans. Black Phoebe. One or two observed in the vicinity of Benson, along the San Pedro River, were the only ones seen.

Sayornis saya. Say Phoebe. Fairly common, both in the Rincons and along the base of the Huachucas. They were in the latter locality when I left, November 8, and would doubtless remain there through the winter months.

Contopus richardsoni. Western Wood Pewee. The only one seen was a single bird noted near the base of the Huachucas on October 29, probably an unusually late date for the species in this region. My earliest record of a spring arrival in these mountains is May 4 (1903).

Empidonax difficilis. Western Flycatcher. An immature female was secured near the mouth of Miller Canyon, in the Huachucas, on October 1. It was the only individual of the species noted on the trip. My earliest spring record for the species is May 18 (1903).

Empidonax hammondi. Hammond Flycatcher. Two small flycatchers, an adult male and an immature male, were secured in the Huachucas, one at 5000 feet, the other at 5500 feet elevation, which, for the present, at any rate, I feel obliged to refer to this species. When I shot them I had no doubt that they were something else, and it is with considerable hesitation that I now refer them to *hammondi*. Through the courtesy of Mr. F. S. Daggett and Mr. Joseph Grinnell I was able to get together quite a series of this species, presenting several points of interest but containing nothing to duplicate my two birds. Two specimens collected by Mr. Daggett near Pasadena, California, during the same week in September, represent what are probably the extremes of what Mr. Ridgway designates as the "white-bellied" and the "yellow-bellied" phases of plumage. The first is an extremely light colored bird, grayish above and almost white below; the latter very dark colored, dark brownish olive above, breast buffy olive, and abdomen sulphur yellow. My two birds, absolutely alike in coloration, differ from both these, in that, above and below, they are decidedly *greenish*, with no trace of olive or olivaceous anywhere. The throat is gray; in sharp contrast to the rest of the underparts and the abdomen is yellow. Four specimens of *hammondi* taken in the Huachucas in September, 1895, are all more or less olivaceous on the back. It is possible that these two birds represent a hitherto undescribed species, but as the differences are all of color, there being apparently none of size or proportions, I hesitate to give them a name.

They were shot on November 2 and 4, making their appearance after a hard storm, no other *Empidonaces* having been seen for a month. They remained in the topmost branches of the live oaks, kept calling incessantly, and were extremely shy and hard to approach, in all these respects reminding me very much of the little *Ornithion imberbe* that is found in this region; and it was with a faint hope that they might belong to that species that I pursued them. The two were the only ones seen.

Empidonax griseus Brewster. Gray Flycatcher. An immature female taken at the base of the Huachucas on October 1 was the only one of the species observed.

Pyrocephalus rubineus mexicanus. Vermilion Flycatcher. An adult male seen in the foothills of the Rincon Mountains on September 22 was the only one observed during the trip.

Otocoris alpestris adusta. Scorched Horned Lark.

Otocoris alpestris occidentalis. Montezuma Horned Lark. Horned Larks were quite abundant on parts of the plains below the Huachuca Mountains, but very irregular in their distribution, there being large areas apparently well adapted to their needs where they could not be found at all. Some of the specimens

secured are typical *adusta* while others are referable to *occidentalis*. Both varieties were secured from the same flock, and they were apparently in about equal numbers.

Cyanocitta stelleri diademata. Long-crested Jay. In the Rincon Mountains but few of this species were observed, but in the Huachucas they were very abundant, as usual. They had quite completed their moult by October 1, and were in bright, fresh plumage.

Aphelocoma woodhousei. Woodhouse Jay. This species proved to be fairly abundant in the Rincon Mountains, but, as I have always found them in this region, shy and retiring, and very hard to approach. They seem to prefer rough, broken country, with plenty of thick underbrush, and are seldom seen in the larger timber. In the Huachucas their call note could occasionally be heard from high up on some brushy hillside, but they kept out of sight, and it was quite by accident that a quick snap shot brought down a specimen on the last day of my stay in the mountains.

Aphelocoma sieberii arizonæ. Arizona Jay. Quite abundant in the Rincon Mountains, and, in the Huachucas, very numerous and exceedingly noisy, as usual. Probably the most conspicuous species of bird in either range.

Corvus corax sinuatus. American Raven. One or two Ravens were seen flying overhead in the Huachucas.

Corvus cryptoleucus. White-necked Raven. I had always supposed this species to be a permanent resident in the vicinity of the Huachucas, but such apparently is not the case. A few were observed lingering in the foothill region and out on the plains, during the first week in October, but they gradually disappeared, and by the middle of the month were all gone. None were seen in the Rincons.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. One or two Yellow-headed Blackbirds were seen near the San Pedro River, about twelve miles from the Huachucas, on the afternoon of September 30.

Agelaius phoeniceus subsp.? Red-winged Blackbird. Some large flocks of Red-winged Blackbirds were seen at the same place as the last mentioned species on November 8, but I was unable to get any specimens. On a previous visit to this region I took breeding specimens of *A. ph. neutralis* at a spot twenty miles further down the river, so it is possible the birds seen were of that variety.

Sturnella magna hoopesi. Mexican Meadowlark.

Sturnella neglecta. Western Meadowlark. There were a few Meadowlarks in some fields below the Huachucas, but, as I have always found them in this region, they were extremely shy and hard to approach. They were feeding in fields of tall grass, waist high or higher, flushing generally at from fifty to sixty yards. After much tramping and futile burning of powder, I succeeded in landing six specimens, five of which appear to be *Sturnella neglecta*, the other a male example of *S. magna hoopesi*.

Icterus parisorum. Scott Oriole. While driving from Benson to the Rincon Mountains on September 22, numerous small flocks of Scott Orioles were observed passing overhead, evidently migrating, most of those seen appearing to be high plumaged males. None were noted in the Rincons, but when we reached the Huachucas there were a few still lingering in the foothill region, the last being observed on October 9. It is rather singular that in the late summer this species seems to disappear from the mountains for a time, as in previous visits to the Huachucas I saw none during the latter part of July or in August, though they breed commonly enough. My earliest spring record for this region is March 31 (1903).

Euphagus cyanocephalus. Brewer Blackbird. About the middle of October

many flocks were seen, evidently migrating, flying in a southerly direction along the base of the Huachucas.

Carpodacus cassinii. Cassin Purple Finch. Arrived in the Huachucas on November 5, when I secured an adult male at the summit of the range. My latest date for this species in the spring is May 11 (1903).

Carpodacus mexicanus frontalis. House Finch. Seen on several occasions near the mouth of Miller Canyon, in October. In my experience it is not a common species in this region at any time.

Astragalinus psaltria hesperophilus. Green-backed Goldfinch. Not seen in the Rincons, but fairly common in the foothill region of the Huachucas early in October. They disappeared before the end of the month.

Spinus pinus. Pine Siskin. Fairly common in the pine region of the Huachucas, from 8,500 feet upwards, during the whole of our stay. Not observed in the Rincons.

Passer domesticus. House Sparrow. A number of "English" Sparrows were observed in the streets of the town of Benson. The last time I visited the town, in June, 1903, they had not yet reached it.

Calcarius ornatus. Chestnut-collared Longspur. An abundant migrant on the plains below the Huachucas. All through the month of October they were observed passing overhead, flock after flock, but comparatively few were seen to alight.

Poœcetes gramineus confinis. Western Vesper Sparrow. Quite common on the plains below the Huachucas but not seen elsewhere.

Passerculus sandwichensis alaudinus. Western Savanna Sparrow. There were one or two fields near the base of the Huachucas, where the ranchers had attempted to raise grain, and in these enclosures I found a number of Savanna Sparrows. They were not seen elsewhere.

Centronyx bairdi. Baird Sparrow. I had previously found this species quite abundant in the plains below the Huachucas in the spring of the year, but on this occasion, after much careful search and hard tramping, I was able to secure but two specimens, both taken on October 24, one an immature male, the other a high plumaged old female.

Zonotrichia leucophrys gambeli. Intermediate Sparrow. Fairly common in the foothills of the Huachucas during October. *Zonotrichia leucophrys*, in my experience more abundant than *gambeli* in this region in the spring, was not seen at all.

Spizella socialis arizonæ. Western Chipping Sparrow. Exceedingly abundant, both in the Rincons and in the foothill region of the Huachucas.

Spizella breweri. Brewer Sparrow. A single specimen was secured on the Huachuca Plains on October 28.

Junco oreganus shufeldti. Shufeldt Junco. Arrived in the Huachucas on October 18, and became fairly abundant a few days later. But very few adult males were seen.

Junco mearnsi. Pink-sided Junco. Not at all abundant; first seen on October 18. My latest date for this species in the spring in the Huachucas is April 15 (1903).

Junco caniceps. Gray-headed Junco. Arrived on October 29 and became quite abundant shortly afterward. The latest date at which I have taken this species in this region in the spring is May 2 (1896).

Junco phænotus palliatus. Arizona Junco. This species was not observed in the parts of the Rincon Mountains we visited, but in the Huachucas it was, as usual, exceedingly abundant from 5500 feet upward. An old female shot on

October 3, is still in the midst of the moult, and ragged-looking birds were observed up to about the middle of the month. Young birds taken the end of October are, in every respect, absolutely indistinguishable from the adults.

***Aimophila cassini*.** Cassin Sparrow. Several were seen in some fields of tall grass near the mouth of Miller Canyon. It was almost impossible to secure specimens, from their habit of lying until almost trodden upon, and then darting off in zig-zag flight through the grass, to repeat the performance when followed up. An immature female shot on October 25 is in the midst of the moult, covered with pin feathers, and others seen during the first week in November were quite as ragged in appearance.

***Aimophila ruficeps scotti*.** Scott Rock Sparrow. Fairly abundant on the rocky hills of the Rincon Mountains. An adult male secured on September 25, and others seen at the same time, were in the midst of the moult. A few were seen in the Huachucas.

***Melospiza lincolni*.** Lincoln Sparrow. A single bird was seen in the Huachucas on October 11.

***Pipilo maculatus montanus*.** Mountain Towhee. A few were seen in the Rincons, while in the Huachucas they were abundant from the summit almost, but not quite, to the base of the range. Immature birds taken the last week in September and during October are not appreciably different from adults.

***Pipilo fuscus mesoleucus*.** Canyon Towhee. I have never in the spring or summer seen this species as abundant in the Huachucas as it was throughout the foothill region this fall. Early in October all the birds seen were moulting, and very ragged in appearance, and specimens with pin feathers on them were taken as late as October 22.

***Oreospiza chlorura*.** Green-tailed Towhee. This species was seen in abundance in the chaparral country between Benson and the Rincon Mountains, on September 22, evidently migrating. It was also met with in the Rincons, and later a few were seen in the foothills of the Huachucas, the last observed being on October 30. My earliest fall date for the species in the latter range is September 1 (1902).

***Zamelodia melanocephala*.** Black-headed Grosbeak. A very few were seen in the Huachucas during the first two weeks in October, the last observed being a female secured October 16. My earliest date for the arrival of the species in this region is April 20 (1902).

***Calamospiza melanocorys*.** Lark Bunting. Seen in abundance along the San Pedro River between Fairbanks and Hereford on September 30. It is rather singular that the species was not observed anywhere else.

***Piranga hepatica*.** Hepatic Tanager. A very few were seen at various times in the lower parts of the Huachucas, below 5500 feet, the last observed being on October 25. My earliest record for the arrival of this species in the Huachucas in the spring is April 11 (1902). An adult male taken October 1 had nearly completed the moult.

***Piranga rubra cooperi*.** Cooper Tanager. An immature female taken in the Rincon Mountains on September 23, 1907, was the only one of the species observed.

***Tachycineta thalassina lepida*.** Northern Violet-green Swallow. Seen at various times during the whole of our stay in the mountains.

***Ampelis cedrorum*.** Cedar Waxwing. Several small flocks were seen in the Huachucas during the first week in October. In my experience this is anything but a common species in southern Arizona.

***Phainopepla nitens*.** Phainopepla. A single bird, an adult male, seen at the

mouth of Miller Canyon on November 4, was, strangely enough, the only one of the species observed during the trip.

Lanius ludovicianus excubitorides. White-rumped Shrike. Fairly common in the foothill region of the Huachucas, and on the plains below. An immature male taken on October 9, had not quite finished the moult.

Vireo huttoni stephensi. Stephens Vireo. Observed only in the Huachucas, where two or three were seen in the live oaks, all below 5500 feet.

Dendroica auduboni. Audubon Warbler. Several were observed on my first visit to the summit of the Huachucas, on October 3, and they were later found quite abundantly in the pines, but not in the lower parts of the mountains. Var. *nigrifrons* had apparently left the mountains before we arrived.

Dendroica nigrescens. Black-throated Gray Warbler. A single bird seen at the mouth of Miller Canyon on October 31 was the only one observed on the trip. My earliest date of arrival for the species in this region is March 31 (1903).

Dendroica townsendi. Townsend Warbler. One was observed at the summit of the Huachucas, about 9000 feet, on October 3. The earliest fall arrival I have record of was seen on August 19 (1902).

Oporornis tolmiei. Tolmie Warbler. One or two were noted near the summit of the Huachucas on October 3. My earliest fall record for this region is August 21 (1902).

Wilsonia pusilla pileolata. Pileolated Warbler. One or two were seen in the oak belt of the Huachucas during the first week in October.

Setophaga picta. Painted Redstart. A single bird seen near the mouth of Miller Canyon on October 5 was the only one observed. The earliest date at which I have seen the species in the Huachucas is March 15 (1903).

Anthus pensilvanicus. American Pipit. A few were seen in some flocks of shore larks, on the plains, a mile or two below the Huachucas, on October 28. It does not appear to be a very common species in southern Arizona, and this is the only occasion on which I have seen it in this region.

Toxostoma rufum. Brown Thrasher. It was one of the surprises of the trip when I secured a male bird of this species, on October 5, near the mouth of Miller Canyon, in the Huachucas, where it was feeding in company with several Palmer Thrashers. I believe that this is the first time the species has been recorded from Arizona, which is far beyond the normal limits of the race.

Toxostoma curvirostre palmeri. Palmer Thrasher. In the lower parts of the Huachucas, up to about 5000 feet, this species was quite common, much more so than I have ever found it in the spring. It was not observed in the Rincons, though there is no apparent reason why it should not occur there.

Heleodytes brunneicapillus couesi. Cactus Wren. A few were seen in the foothills of the Huachucas, but they were not at all abundant.

Salpinctes obsoletus. Rock Wren. Fairly common along the base of the Huachucas, and very abundant on the rough, rock-strewn hills of the Rincon Mountains.

Catherpes mexicanus conspersus. Canyon Wren. Seen both in the Huachucas and in the Rincon Mountains, but not common in either range.

Thryomanes bewickii eremophilus. Desert Wren. Found both in the Rincons and in the Huachucas. In the latter range they were seen up to about 6000 feet, the same as during the summer months, and in about equal numbers. They are undoubtedly resident.

Troglodytes aedon parkmanii. Parkman Wren. A single bird remained for

several days, about the middle of October, around a house in the lower part of Miller Canyon. It was the only one of the species seen.

***Certhia familiaris albescens*.** Sierra Madre Creeper. Fairly common throughout the Huachucas during October, but in daily lessening numbers. The species does not remain in the mountains through the winter.

***Sitta carolinensis nelsoni*.** Rocky Mountain Nuthatch. A few were seen in the Rincon Mountains. In the Huachucas they were abundant, mostly in the lower parts of the range.

***Sitta pygmæa*.** Pigmy Nuthatch. The Pigmy Nuthatch appears to be a bird of the pine woods altogether. In the Huachucas it was not seen below 8000 feet at any time, and at the end of October was the only species of bird common at that altitude. It was not met with in the parts of the Rincon Mountains we visited.

***Bæolophus wollweberi annexus*.** Bridled Titmouse. As usual this bird was found in the greatest abundance in the oak belt of the Huachucas, while in the Rincos it was one of the few species that was fairly common. Moulting specimens were taken September 26, and in October young and old were indistinguishable in plumage.

***Psaltiriparus plumbeus*.** Lead-colored Bush-tit. This species proved to be unexpectedly rare in the Huachucas. I was in the mountains two weeks before I met with it, and then it was only occasionally that I would run into a flock. It was not seen in the Rincos at all.

***Regulus calendula*.** Ruby-crowned Kinglet. Very common in the Huachucas. Early in October they were frequently met with in flocks of twenty or twenty-five, but their numbers were greatly lessened by the end of the month. I believe that a few undoubtedly remain in the mountains through the winter.

***Myadestes townsendi*.** Townsend Solitaire. A single bird was seen near the mouth of Miller Canyon on October 10.

***Hylocichla guttata guttata*.** Alaska Hermit Thrush. Two specimens referable to this race were secured on October 29 and November 6, respectively. Very few Hermit Thrushes of any sort were seen.

***Hylocichla guttata auduboni*.** Audubon Hermit Thrush. A female of this variety was secured in the Huachucas on October 11.

***Sialia mexicana bairdi*.** Chestnut-backed Bluebird. One or two small flocks were seen in the Rincon Mountains. In the Huachucas the species was not as abundant as I have found it during the summer months, and was most frequently met with in the foothill region.

***Sialia arctica*.** Mountain Bluebird. Seen on the plains below the Huachucas. The first flock was observed on October 28, and the species was afterwards met with on several occasions.

Chicago, Illinois.

THE MEXICAN BLACK HAWK

By GERALD BAMBER THOMAS

DURING the fall and winter of 1905 and spring of 1906 it was my pleasure to observe quite extensively the habits of one of the most, if not the most interesting of our Raptores, the Mexican Black Hawk (*Urubitinga anthracina*). Nearly all my observations were confined to the little colony of British

Honduras, Central America, where the Mexican Black Hawk is by far the most abundant hawk of the region.

The favorite haunt of this species there, I found, was the long stretches of sand dunes and savannas studded here and there by clumps of palmetto and gnarled pines.

Here the ground is honey-combed by thousands of holes of various sizes, the abode of countless numbers of huge land crabs. In the evening, as soon as the sun is down, they come out from their holes by thousands, hurrying here and there and always fighting, brandishing their big claws in the air like a pigmy wielding a huge scoop-shovel.

It is then that the hawks are seen busily engaged in their pursuit for food, as these crabs form almost their sole diet in this particular locality. They always catch and kill more than they can eat at the time in order that they may not be wanting on the morrow when all the crabs have gone deep in their holes to escape the heat of the day. Occasionally I noticed a hawk flying to the nest with a large



NEST OF MEXICAN BLACK HAWK

lizard or snake, but more frequently they were satisfied with the crabs obtained the night before. In not one instance did I see them in pursuit of any birds, nor do their nests with young show any signs that birds are ever taken as prey.

In flight they excel every one of the hawks, kites, or falcons except possibly the Swallow-tailed Kite. Their flight is really marvelous, excelling in some particulars even the far-famed Frigate or Man-o-war Bird. The greater part of the year they are rather dull and sluggish but when nesting time comes they are ever on the wing until the young are able to take care of themselves.

It is very interesting to see them obtaining material for the nest. They circle high in the air sending out their queer whistling cry, when suddenly one of them folds its wings very close to its side and plunges towards the ground with the speed of an arrow. One almost holds his breath expecting to see the great bird strike the earth with such force that he will be transformed into a lifeless mass of bone and feather. But suddenly just before he reaches the dead tree, thru whose branches you expect to see him crashing, he throws open his wings to their full ex-

tent, his tail spreads and flattens against the downward rush and the great talons hang loosely down. Then gliding swiftly over the topmost branch, the swinging and apparently useless feet suddenly stiffen, a faint crack is heard and he slowly fans his way over to the nearby nest, firmly grasping in his talons a twig from the tree on which he seemingly so nearly escaped destruction.

The nest itself is a huge platform of sticks often measuring four feet across and two feet in depth, sometimes deeply and other times only slightly cupped, lined with pieces of green leaves and green pine needles. Their location I always found was in a pine tree, the distance from the ground varying from fifteen to fifty or sixty feet. More often, however, they were between twenty and thirty feet up, in small pines.

According to several good authorities the usual complement of eggs is two and three, but in only one instance out of the twenty-seven nests examined was there more than one egg, and this exceptional nest contained two. In some cases they are beautifully marked with lavender, umber and light brown, and in other cases they are totally unmarked; however the greater majority show distinct markings.

The old birds are very bold when the nest contains young and often perch on a branch five or six feet from the nest while one handles the young. Often, too, the male, circling high in the air with dangling legs, a marked peculiarity of this species, will suddenly make one of his awful plunges straight at the intruder, swerving just in time to avoid the shock which would undoubtedly kill the bird and knock the intruder out of the tree.

Like many other hawks, if the nest is robbed, they at once go to work on another nest, and I have taken three sets in one season from the same bird.

Livermore, Iowa.

A MIGRATION WAVE OF VARIED THRUSHES

By JOSEPH MAILLIARD

OCTOBER 20, 1906, is a date firmly fixed in my memory by two occurrences. One was the commencement of one of the worst forest fires that we have ever been threatened with—started as usual by criminal foolishness—and the other the witnessing of the only actual *wave* of migration on the Pacific Coast that I have had the good fortune to observe. The latter, happily, came first in order on that memorable day, the second occurrence keeping me too busy for a week to think of anything beyond saving the Rancho San Geronimo, and possibly the old idea of future punishment, when the flames got the better of us at times. On the morning of this day I started out early on a quail hunt, with my son and my ranch superintendent, as had been previously arranged, partly on business and partly on pleasure bent.

A very strong, and exceedingly warm and dry north wind was blowing, amounting in places to a veritable gale. We drove from the house to the extreme end of the ranch, a distance of about four miles, before sunrise, in the face of the gale, and putting up the team in the barn there, commenced on foot to ascend the range with the purpose in view of looking over the property and, incidentally, seeking for quail in their accustomed haunts. The sun was rising as we began the ascent and the air startlingly clear. We had taken but a few steps when my atten-

tion was attracted by the sight of a few birds, about the size of robins, flying high and scattered over the sky. This was so unusual at this time of day that I remarked upon the phenomenon to my companions.

As the sun cleared the horizon and the light increased we realized the fact that the sky was dotted in every direction with birds flying singly, and at quite an elevation, mostly toward the south. As the light grew stronger individuals here and there dropped to a lower altitude and allowed us to discern the fact that they were Varied Thrushes (*Ixoreus naevius*). For some time their numbers increased until there were hundreds in sight at once in any direction one might look, and as we were by this time pretty well up on the range we had quite an extended view. Soon we noticed single birds dropping out of the flight and settling in the bushes. These must have been our regular winter residents. Apparently not over one in a hundred dropped out in this way. After nine A. M. the numbers decreased and by ten o'clock the flight was over, with no birds in sight except a few flying from one canyon to another and settling down locally, apparently. I have seen many flights of birds, and migratory flights at that, but only on a limited scale, during many years of observation in California, and yet have never witnessed such a genuine wave of migration, on so vast a scale, as occurred between the hours of six and ten A. M. on the above date. Nor have I seen any mention of this wave having been observed by others. We are not supposed to have such things in California, as the birds generally move more leisurely on this coast when migrating. It would be interesting to know if any other members of the C. O. C. encountered this wave.

San Francisco, California.

NOTES ON THE WALTZING INSTINCT IN OSTRICHES

By F. W. D'EVELYN

ONE evening just as the lengthened shadows in the West proclaimed the advent of early darkness, for there is no twilight in Africa, while driving along the high veldt leading to Pretoria, then but a village nestling among beautiful hedges of rose trees, my Kaffir suddenly startled me by exclaiming "Nance Inje": there is an ostrich! The shrill tone of the interesting announcement for the moment threw me off my guard; quickly recovering myself I raised my carbine to my shoulder and sent a 45-caliber bullet after the great grey bird which by that time was making rapid strides in a two-step gait several rods away, that baffled accurate shooting.

The motion of the bird was peculiar but characteristic of the species in the first stages of its flight, and was one of the gaits in the strange combination of movements so well known to those who are familiar with the birds in their wild or domestic state. It was suggestive of a form of dance, indeed in many of its parts not at all dissimilar to the steps in some of the native dances in Kaffir-land. The dance is a rapid whirl suggestive of the turn of the dervish priest; the ostrich however turns first in one direction and then while turning, without slackening speed, suddenly reverses and turns the other direction; the wings are held extended and conform with the alternate raising and lowering of the sides; the head is sometimes held extended forward with the neck outstretched and again held backward with the head erect. Even when going at full speed the bird will suddenly pivot and go directly opposite to its former course.

The young chicks exhibit this movement, but are not at first anywhere near as perfect as the adult birds, showing that an education is necessary to perfect that which without doubt is an instinctive character.

The manager of the Cawston Ostrich Farm informs me that their chicks, the many generations removed from the wild birds, exhibit the dance movement, but very imperfectly, scarcely running any distance before squatting down, as if there were dawning within them an instinct, a reflex of the narrowed horizon permitted by the inclosure in which their parents have been reared. Single birds or a few birds rarely make as good a performance as when there are several together, thus giving proof that there is a factor of suggestion or imitation requisite to make the best actors.

That these movements are the outcome of excessive vitality or playfulness is scarcely to be accepted; there must be utility if not necessity in the action. In this connection I will say that I am strongly attracted to the suggestion of an esteemed colleague, J. E. Duerden, of the Transvaal. Mr. Duerden states that he is of the opinion that the waltz is simply a protective movement calculated to render the bird less liable to be seized by any of its natural enemies that are so common in the habitat of the bird. The ostrich inhabits open or bush-covered lands that are also the home of the lion, the brush cat and the leopard. These animals capture their prey by springing upon it. The ostrich, as was demonstrated by the case cited in my opening remarks, when surprised jerks itself so quickly from side to side that its pursuer finds it almost impossible to arrange its spring, or in case of a human hunter, for him to aim accurately. This is the character of the defence when the bird is first aroused; but let attack press more persistently and the bird darts off with great rapidity for a long distance and then suddenly changes its direction of flight so quickly that no sort of hunter could be prepared for it.

Much less successful is the defence or combat of the captive, or the ostrich at bay. Then the bird depends on kicking forward, hoping that with its powerful foot it will down its enemy and at the same time tear open the body with the claw-like nail on the one great toe. Kicking would be of little avail with the lion or leopard. So the ostrich trusts to nimbleness of legs to dodge the spring, and then by fleetness of foot to get away from the neighborhood.

Alameda, California.

THREE NESTS OF NOTE FROM NORTHERN CALIFORNIA

By HARRY H. SHELDON

WE were camped, the two of us, on the Lagunitas Creek, close to the mouth of the Little Carson, on the first Saturday night in May, 1907, the opening of the trout season. It seemed but a short time after bacon and coffee that our pipes went out and darkness had turned to the gray of early morning. An occasional thrush would give a short whistle as tho just awakening, and, to further tell us the time had come to crawl from our warm blankets, a horned owl gave a series of hoots as a farewell to his night of depredations.

Moving briskly to keep warm we were soon thru with breakfast and wended our way up the Little Carson which by noon had afforded us a nice mess of trout. We then lay ourselves at the base of a hoary pine to have lunch. Up to this instant fishing had been the main feature of the trip, but upon hearing the pleasant

notes of a Western Winter Wren (*Nannus hiemalis pacificus*), we imagined ourselves on a collecting trip and silently waited for this uncommon resident to entertain us again. The song was not repeated but directly in front of us from the upturned end of a charred log, a small ball of brown feathers darted into the brush below and, odd to say, neither bird nor song was seen or heard again. However a nest was evidently in the log, and with little trouble we found a cosy home tucked away in a niche. Altho there were no eggs to greet us the nest was lined and ready to be permanently occupied.

We had planned to take a collecting trip into Sonoma County two weeks from this date, and for this reason were obliged to allow but seven days for a complete set, which we hardly expected. However, on the following Sunday we made the trip again and after a fresh morning drive from San Anselmo of an hour and a half, tied our horse and proceeded to walk for another hour up the "angler's trail" of the Lagunitas to the mouth of the Little Carson where we plodded and climbed our way thru timber and brush until with much anticipation we came to the charred log. After waiting for some time in a secluded spot in hopes of seeing the birds, we approached the log and found that three eggs had been laid during the week.

After waiting over an hour without seeing either of the birds, with the nest and eggs carefully packed we made our way down the canyon to our rig. Before we had gone far, Taylor, my companion, found a nice set of Steller Jay and also a newly built nest of another Winter Wren, which, despite its unusual beauty we left in the expectation of procuring a complete set, should the birds return to the same site the following season, for, as has already been stated, we could not again visit the locality until another year to come. The nest taken was placed in the end of a log five feet from the ground. The material used consisted of redwood bark fibers, pine needles, dead moss, leaves and twigs, and lined with rabbit's fur and hair and a few feathers. The eggs are faintly spotted with a pinkish brown, the ground color being a creamy white resembling the eggs of the Vigors Wren.

In June of 1904 the writer made a collecting trip to the South Fork of the Gualala River, a small stream about forty feet in width slowly winding itself down a deep thickly wooded canyon. Its banks are bordered with a dense growth of huckleberry, and at their extreme edge the sweet azalia grows in myriads from a tangle of various ferns and lilies. In such places as this the Monterey Hermit Thrush (*Hylocichla guttata slevini*) makes his summer home.

It was all due to luck that I first became acquainted with this mountain songster. While scanning the trunk of a pine tree endeavoring to get a shot at a creeper, I tripped on a branch of a fallen laurel and flushed a bird from her nest. The creeper was immediately forgotten; for the bird, as she stood frozen to the fence post, proved to be a Monterey Hermit Thrush, and within reach of me in the suckers of the stump was her green mossy nest and three sky-blue eggs. As much as I wanted to stand and gaze at my fortunate discovery I was obliged to leave the vicinity instantly to assure myself of obtaining a full set. Sad to relate, on my return the next day, the nest was empty, not even a shell was left to furnish a description of the eggs for future reference. And as I stared into the vacant nest, the harsh hote of a Jay in a nearby thicket easily explained the cause of the disaster, and with the nest as a token I departed for camp.

About the end of June, while fishing, I found another nest situated on the bank of the river in a bush of huckleberry. Four fledglings scattered into the brush as I was about to reach up to the nest. The parents were soon on the scene and were not at all shy, as I expected they would be, even tho under such circumstances.

With sharp whistling notes they endeavored to drive me away from their home, and I obliged them by retreating to a log, where I sat watching their maneuvers. Nothing more interesting happened than the usual procedure of locating their terrified young, which in a few minutes were in evidence from the subdued tone of their notes; so continuing my way down stream I thought of another season to come when I would again make the trip to the South Fork for the sole purpose of obtaining the nest and eggs of this very desirable bird.

The opportunity arrived in May of last year, 1907, when in the company of "Fy" Taylor, my usual companion upon such expeditions, I returned to the same locality. And the 27th of May found us on the South Fork up to our necks in patches of huckleberry. A few nests found of the year previous told us we were on the right track and this was verified later by a bleached chip of rotten wood showing thru a bush of huckleberry which revealed a new nest empty, but apparently in readiness for the bird to take possession. On the following day upon our return the nest contained an egg. The bird being away we quickly left not caring to meet her at this period of the game. On our way back to camp another nest was found by Taylor in a clump of branches of an oak tree about eight feet from the ground above the stream. The nest was almost finished and as we stood beneath it the bird flew into the tree directly in front of us with more building material, but seeing us she quickly disappeared, and evidently started a home elsewhere, for the nest was never completed nor was the bird seen again. The last nest was found May 30th, placed in the shoots of an alder on the bank of the river, and like our previous experience the bird saw us and the nest was abandoned. By this time the first nest found contained three eggs, the bird having laid each day from the date of discovery and three days later, on the 3rd of June, we made a final trip to take the set, which was complete with the three eggs. During the three visits to this nest the bird was not seen until the last moment. As we were wrapping her nest and eggs she darted into the bush above us and seeing the nest gone, flew to a nearby fence and was shot, to complete identification.

All nests found were placed from two to eight feet from the ground, their favorite nesting site being in patches of huckleberry and in all cases situated close to the stream. This nest was placed in a bush of huckleberry on the edge of the stream three feet from the creek bed. It was composed of chips of dead wood, small branches of huckleberry, dead leaves and twigs, and held together with mosses and rootlets. The lining consisted of fine redwood bark, fibers, fine rootlets and the remains of dead leaves. The eggs are a shade lighter than the robin's and of one color.

On the 28th of May, while on our way to the coast after nests of the Nuttall Sparrow another interesting bird was met with. After a hurried visit to a few mammal traps we made our way up a steep cattle-worn trail to the ridge above camp overlooking the ocean. At the top in the center of a little glade a small group of laurels, madrones, tan-oaks and firs, principally the latter, stood with the quiet of a hot morning atmosphere. And out of this quiet came at intervals the rolling note of a Louisiana Tanager which was a gentle hint for us to cross over and investigate the interior. Just as we broke thru the first low branches at the edge, a dead limb cracked under our feet and a much frightened and surprised Pileated Woodpecker dropped backward from a dead stump and went cackling off thru the timber, much the same as a guinea-hen warbles when with outstretched neck she endeavors to scale the barn yard fence. Floundering over logs and thru brush, Taylor was hot on his trail; for skins of these big fellows are worth a hard day's work, and besides when brought to view in after days usually bring up a pleasant memory. While I

waited his return the subdued notes of a Western Golden-crowned Kinglet caused me to look to the top branches of a fir close by. I looked till my neck ached, but as usual this green mite of a bird that nature so skilfully blends with the tint of the forest was everywhere but the place I looked for him. However, as I was about to give up the search he flew down into a tan-oak. Following close after him I soon found him clinging to the underside of a branch, and blazed away. He silently left the tree without a feather disturbed. Again following to a large ash I was about to pull on him with the other barrel, when I noticed another Kinglet join him and I stood close to the trunk to watch them.

If it had not been for my bad judgment, a defective shell, or probably more providence than anything, there would have been no cause to write these notes. Flying down to within five feet of my head the mate began tugging at some moss which grew in clusters on the trunk, and immediately a mental picture of a partly constructed nest flashed across my mind. It was hard to suppress an inclination to turn my head in search of it, which action would certainly have spoiled any chance of its discovery. But I obeyed the instinct to freeze, and stood afraid even to wink until the bird fluttered over my head with a few timid peeps sixty feet up in a tall fir and disappeared into a cluster of small branches on the underside and close to the end of a large overhanging limb.

About this time Taylor appeared on the scene with a fine male Pileated and we exchanged congratulations. For about a half hour we stayed in this spot watching the Kinglets make trip after trip to their nest which was absolutely invisible from any point of view. But it was there, that was sure; and for the fact that the birds had not the slightest regard for our presence, it seemed a certainty that a little patience on our part would mean the nest and eggs of *Regulus satrapa olivaceus*. Much satisfied with the prospects in view we resumed our way to the coast and by noon were in the midst of tangles of blackberry thickets with Sparrows piping all about us; but with all this encouragement not a nest was found, until we again made the trip on the second of June when we took three rich sets.

Meantime the Kinglets were not seen making trips to their home with building material as they had done on the day of finding the nest; in fact only once did I hear them in the vicinity and then neither of them were seen. Evidently they must have been adding the last finishing touches when I first saw them. Much to our regret we had a limited amount of time to stay on the South Fork; business compelled us to break camp on the 8th of June. So the day before, we were obliged to pay our last visit to the "Kinglet tree". A full set was hardly expected, two or three eggs would answer a good purpose, and the anticipation from this thought hurried us across the open glade to the tall fir.

Bird life was unusually quiet, probably due to a thick fog that floated up the gulches from the ocean below and reaching the ridge would spread its misty blanket over the timber where it hung until the warm rays of the noon sun melted it into space. On one occasion it became so *damp* owing to a fog of this sort which managed to get down into the canyon one night, that waking up half drenched we decided it would be more comfortable around a camp fire than to attempt sleep in miniature lakes of fog. And sitting by a smouldering fire we smoked and were smoked, till the first sign of morning gave us a chance to start another day.

But back to the tall fir and the Kinglets: After exchanging ideas as to which was the best way of getting to the nest we decided to both climb to the limb in which it was placed and take a chance at crawling down the limb beneath. Taking a coil of stout cord I fastened one end as near the nest as I could reach and tossing

the other to Taylor told him to take in slack while I pulled inward, until the nest began to tilt and we dared not draw it closer. Being compelled to hold on with one hand I was at some disadvantage but finally managed to reach the branch covering the nest, and carefully breaking it away saw for the first time how it really looked. A green bunch of delicate mosses clinging gracefully to the inner side of a small cluster of branches where in its cavity of silky fibers and downy feathers, lay like pearls five faintly spotted eggs almost as frail as bubbles, which I covered with a soft piece of cotton that made it safe to pull the limb towards me another foot, giving me an opportunity to use both hands. When the big limb flew back into place and I held the treasure intact, a mingled feeling of nervous joy and relief went out in a big sigh, and I looked back to the time when I tried to kill one of those Kinglets and understood why kind providence spoiled my aim.

The nest is a compact ball of mosses and lichens with a round deep cavity $1\frac{3}{4}$ inches deep by $1\frac{1}{4}$ in diameter; the lining consists of a few cow hairs, fine bark fibers and feathers woven in such a manner about the edge that there appears to be hardly any cavity at all. The eggs are white with a ring of faint brown spots on the large ends and here and there scattered over the surface.

San Anselmo, Cal.

NOTES FROM SANTA CRUZ ISLAND

By C. B. LINTON

AT 11:30 p. m., November 19, 1907, my father (H. Linton), Mr. George Willett, and myself left San Pedro harbor in a dilapidated fishing smack and in company with a crawfisherman, one "Cold-foot" Jorgensen. We arrived off the south end of Santa Cruz Island at 10:30 the following day during a stiff nor'wester. For various reasons we were unable to make camp until the 22nd. It may not be amiss to state here that twice during the blow we were nearly wrecked: once while at anchor in Potatoe Harbor, a broken anchor allowing the boat to drift within the breaker line and nearly onto the rocks. In this instance the timely arrival of Willett and H. Linton in a small boat, saved the day, and incidentally the fishing smack. At another time (the engine having broken down) we were blown nearly onto the rocks of Ana Capa Island; but with father at the wheel and Willett and I on the "sheet" we managed to hold her off. I mention the foregoing, and the many sleepless nights spent on the rocky shores, "running" the surf several times each day (with attendant duckings), etc., merely as a warning to those who seem inclined to believe a field naturalist's life "strewn with roses". (It's generally strewn with cacti!) For instance, here is a fair sample day: November 20, a. m. rowed seven miles up coast; coming back were obliged to put ashore in rocky cove, thru heavy breakers, to keep from swamping during high wind; secured 12 specimens here; reached camp at 1:30 p. m.; made up specimens, 6 p. m.; broke camp, packed 100 green specimens, loaded tent and camp outfit in skiff, rowed four miles along dangerous coast after dark; 8:30 p. m. ran breakers and made camp on beach; 3:30 a. m. broke camp, ran breakers, rowed fourteen miles to Northwest Harbor, ran breakers, made camp, went after specimens; 5 p. m. to 10 p. m. made skins. "It's a strenuous life".

Santa Cruz Island is very mountainous, with wide valleys intervening. There

are perhaps 40,000 sheep on the island, a few cattle, immense barley fields and grape vineyards, several ranches, a large winery, and some 100 men employed during the harvesting season. It was with the kind permission of Mr. Fred M. Caire, owner of the island, that I was enabled to carry on the observations herein chronicled.

Our first camp was on the southern coast at Cochas Pietres (Hog Harbor?). The tiny streams in the wide canyons here were lined with an abundant growth of willows and wild blackberry vines. The hills, sloping gradually to the higher range, were covered with holly, manzanita, iron wood and wild cherry, with here and there an oak, and, of course, cacti in abundance. We remained here until November 30, Mr. Willett then leaving for Los Angeles, via boat to Santa Barbara.

Our second camp was made at Northwest Harbor. This is the desert portion of the island and is bordered by a rocky, precipitous coast. Ten days were spent here before we could round the north end of the island, owing to severe storms.

Our last camp was among the pines near Prisoners' Harbor, northeast coast. Here we found the Santa Cruz pines, oaks, holly, manzanita, ironwood, cherry, etc., in superabundance. The highest altitude is in this vicinity, about 2800 feet. Deep inaccessible gorges and impenetrable thickets were encountered. In the limited time at my disposal I could only commence work here and hope to return soon to continue the work planned.

Mr. Grinnell has kindly examined many of the specimens secured and identified many of the, to me, doubtful ones.

Colymbus californicus. American Eared Grebe. One specimen secured by Mr. Willett in November.

Gavia pacifica. Pacific Loon. Abundant in migration; several specimens taken.

Cerorhinca monocerata. Rhinoceros Auklet. Mr. Willett and I secured specimens along the southern coast in November. In December I secured several at Northwest and Prisoners' Harbors. Those observed were not especially shy and were easily approached by boat, tho of course diving often and sometimes leading us a merry chase. We were unable to flush one from the water. They were, however, sometimes seen on the wing, passing up and down the coast. One was seen in the bay at Santa Barbara, within a few feet of a fisherman at work. Crows examined contained freshly caught sardines, 3 to 4 inches long; stomach contents: meat and bones of small fish.

Ptychoramphus aleuticus. Cassin Auklet. Common about Anacapa Island, and in the channel between Anacapa and Santa Cruz. Several were taken along south coast, and noted at other points.

Synthliboramphus antiquus. Ancient Murrelet. I secured two specimens near shore at Prisoners', December 17 and 18. This, I believe, is the southernmost record for this species, Mr. Loomis having taken them at Monterey.

Brachyramphus hypoleucus. Xantus Murrelet. One taken by Mr. Willett about one mile out from Cochas Pietres.

Cephus columba. Pigeon Guillemot. Reported breeding in Painted Cave, northwest coast, by a fisherman.

Larus occidentalis. Western Gull. Very common.

Larus heermanni. Heerman Gull. Very common. Principal food consisted of shrimps secured in the kelp fields near shore. November and December many birds were just changing from "winter" to "summer" plumage, the heads being mixed white and dark grayish.

Fulmarus glacialis glupischa. Pacific Fulmar. Mr. Willett and I secured several specimens of the dark phase. One light phase was taken near shore, November 25. Six specimens in my collection range from very dark slate-gray to nearly pure white. December 4 I secured two dark-phase specimens in the surf, with a spaniel retriever; these had died during a stormy night and drifted in.

Sterna maxima. Royal Tern. Common.

Puffinus opisthomelas. Black-vented Shearwater. Seen by Mr. Willett on several occasions.

Puffinus griseus. Dark-bodied Shearwater. One secured by Mr. Willett, November 20, but was washed overboard during a storm. Another was taken November 23 by Mr. Willett. Several were seen November 20 to December 1.

Oceanodroma melania. Black Petrel. A dark petrel, probably of this species, seen near Anacapa November 20.

Phalacrocorax dilophus albociliatus. Farallone Cormorant. Fairly common.

Phalacrocorax penicillatus. Brandt Cormorant. Abundant.

Phalacrocorax pelagicus resplendens. Baird Cormorant. Common.

Pelecanus californicus. California Brown Pelican. Fairly common on both coasts. Adults and birds of the year were noted.

Merganser serrator. Red-breasted Merganser. Frequently seen about Northwest Harbor, feeding in the tide pools. The craw of a ♀, obtained December 2, contained 9 rock bass and one spotted shark, each 2 to 4 inches long.

Oidemia deglandi. White-winged Scoter. Several seen by Mr. Willett.

Oidemia perspicillata. Surf Scoter. Adults and immature birds were common on both coasts.

Anser gambeli. American White-fronted Goose. Abundant on Santa Rosa Island.

Ardea herodias. Great Blue Heron. Several seen along both coasts. Usually standing "hip-deep" in the kelp beds 50 to 200 yards off shore.

Fulica americana. American Coot. One seen December 18, in the marsh at Prisoners' Harbor.

Crymophilus fulcarius. Red Phalarope. Abundant in the channel between Anacapa and Santa Cruz. Very common in the kelp fields along the southern coast until November 27; few seen after that date.

Tringa minutilla. Least Sandpiper. Seen only at Northwest Harbor.

Calidris arenaria. Sanderling. Seen at Northwest Harbor.

Heteractitis incanus. Wandering Tattler. Specimens secured at each camp. The two first primaries of one specimen secured December 17, were still in "breeding plumage" color, namely rich brownish, not having been "dropped" for the gray winter ones, tho the other primaries were new.

Actitis macularia. Spotted Sandpiper. Fairly common on both coasts.

Numenius hudsonicus. Hudsonian Curlew. One secured December 8 at Northwest Harbor.

Squatarola squatarola. Black-bellied Plover. Common at Northwest Harbor. Large flocks seen feeding on the mesas one-half to one mile inland, and roosting on the small rocky islands, near shore.

Ægialitis vocifera. Killdeer. Several seen on the beach and mesas, Northwest Harbor.

Ægialitis nivosa. Snowy Plover. Fairly common at Northwest Harbor.

Arenaria melanocephala. Black Turnstone. Several specimens secured by Mr. Willett at Cochias Pietres. Abundant at Northwest Harbor.

Hæmatopus bachmani. Black Oystercatcher. December 1 to 8 seven speci-

mens were seen and five secured, at Northwest Harbor. They were always observed on the outer rim of volcanic rocks standing in the surf, or on the rocky "islands", and were hard to secure. The feet and legs of specimens taken, are pale flesh color instead of red as in breeding season. On December 3 I shot an oystercatcher which fell in the heavy surf. Unable to secure it myself I had started tentward for my retriever when I was greatly chagrined to see a bald eagle swoop down, gather in my prize and carry it away.

Zenaidura macroura. Mourning Dove. Common inland.

Buteo borealis calurus. Western Red-tail. Several seen.

Haliaeetus leucocephalus leucocephalus. Bald Eagle. Adults and birds of the year seen at each camp.

Falco peregrinus anatum. Duck Hawk. Fairly common along the southern and southwestern coasts, where they undoubtedly breed. Mr. Willett and H. Linton observed one pair capture a red phalarope that was feeding in the kelp near shore. First one falcon then the other giving chase until the phalarope was tired out and captured. Black turnstones were the favorite prey about Northwest Harbor.

Falco columbarius. Pigeon Hawk. I saw several in the canyons of both coasts. One alighted within 15 feet of my hiding place in the willows but darted away before I could turn my gun. December 18 I saw a pigeon hawk carrying a screaming bird in its talons.

Falco sparverius phalaena. Desert Sparrow Hawk. Occasionally seen. An adult ♂ and ♀ secured in December.

Pandion carolinensis. American Osprey. I saw one osprey near the southern coast November 25.

Strix pratincola. American Barn Owl. Mr. Willett secured one specimen, November 20.

Speotyto cunicularia hypogaea. Burrowing Owl. Fairly common in suitable localities. Specimens secured average slightly paler than those taken in the vicinity of Los Angeles. Measurements also differ slightly.

Ceryle alcyon. Belted Kingfisher. Seen on both coasts.

Colaptes cafer collaris. Red-shafted Flicker. Fairly common near Cochas Pietres and in the pine district. Two specimens preserved.

Aeronautes melanoleucus. White-throated Swift. Several seen December 18.

Calypte anna. Anna Hummingbird. Fairly common; several preserved.

Selasphorus alleni. Allen Hummingbird. Several seen. An adult male was secured November 24.

Tyrannus vociferans. Cassin Kingbird. A kingbird seen near camp November 24, doubtless this species.

Sayornis saya. Say Phoebe. Fairly common.

Sayornis nigricans. Black Phoebe. Fairly common.

Contopus richardsoni richardsoni. Western Wood Pewee. I heard several among the pines in December but did not secure a specimen.

Empidonax difficilis. Western Flycatcher. Several seen and heard. November to December 15; none secured.

Otocoris insularis. Island Horned Lark. Common on the mesas inland.

Apelocoma insularis. Santa Cruz Island Jay. Abundant except on northwestern portion of island. Those seen in the vicinity of Cochas Pietres were nearly all females. In the higher pine region this order was reversed; only two or three females observed.

Corvus corax sinuatus. American Raven. Several specimens taken by Mr.

Willett and myself. Among these were specimens corresponding with the description of the supposed Clarion Island Raven. These are undoubtedly *Corvus corax sinuatus*.

Sturnella neglecta. Western Meadow Lark. Common inland.

Carpodacus purpureus californicus. California Purple Finch. One female specimen secured in the pines by H. Linton December 16, and several others seen.

Carpodacus clementis. San Clemente House Finch. Common over most of the island.

Astragalinus psaltria hesperophilus. Arkansas Goldfinch. Several seen at Cochas Pietres in November. One taken.

Ammodramus sandwichensis alaudinus. Western Savanna Sparrow. Several seen, Northwest Harbor.

Ammodramus sandwichensis bryanti. Bryant Marsh Sparrow. Two seen and one taken at Northwest Harbor in December.

Chondestes grammacus strigatus. Western Lark Sparrow. Several seen at Cochas Pietres in November. One was taken.

Zonotrichia leucophrys gambeli. Intermediate Sparrow. Common everywhere.

Zonotrichia coronata. Golden-crowned Sparrow. Fairly common everywhere.

Junco hyemalis thurberi. Thurber Junco. I secured an adult male and female in the head of a canyon near Cochas Pietres November 28.

Aimophila ruficeps ruficeps. Rufous-crowned Sparrow. Mr. Willett and I each secured a specimen in the brushy canyon near the south coast. In the early evening of December 16 I observed a flock of 40 or 50 birds feeding on a grassy hillside near Prisoners', securing two specimens.

Melospiza graminea (?). Santa Barbara Song Sparrow. Fairly common.

Passerella iliaca insularis. Kadiak Fox Sparrow. Mr. Willett and I secured several specimens at Cochas Pietres in November. December 16 I secured another in the pines.

Passerella iliaca megarhyncha. Thick-billed Sparrow. November 24 I secured 2 specimens in a canyon of the southern coast.

Passerella iliaca stephensi. Stephens Fox Sparrow. One taken December 14, in the manzanita underbrush in the pines at an altitude of about 2800 feet.

Pipilo clementæ (?). San Clemente Towhee. Fairly common. Some specimens secured had not lost the brownish edgings to the feathers of the back, giving them a peculiar appearance.

Lanius anthonyi. Island Shrike. Fairly well distributed over the whole island. 16 specimens in all, preserved.

Vireo huttoni mailliardorum. Santa Cruz Island Vireo. Fairly common.

Helminthophila celata celata. Orange-crowned Warbler. One specimen taken November 29, but lost during storm at sea.

Helminthophila sordida. Dusky Warbler. Very common.

Dendroica townsendi. Townsend Warbler. I secured a single specimen in the oaks, Prisoners', December 13.

Anthus pensilvanicus. American Pipit. Several seen.

Mimus polyglottos leucopterus. Western Mockingbird. Fairly common.

Salpinctes obsoletus. Rock Wren. Fairly common in certain localities.

Catherpes mexicanus punctulatus. Dotted Canyon Wren. In a canyon near Prisoners', December 19, I secured an adult ♂.

Thryomanes nesophilus. Santa Cruz Island Wren. Fairly common. I can discern no difference between this wren and the specimens from vicinity of Los Angeles and Pasadena.

Psaltriparus minimus minimus. California Bush-tit. Several seen. One taken.

Regulus calendula. Ruby-crowned Kinglet. Common.

Polioptila cærulea obscura. Western Gnatcatcher. A gnatcatcher heard on several occasions in the brush. Probably of this species.

Hylocichla ustulata ustulata. Russet-backed Thrush. One secured.

Hylocichla guttata nana. Dwarf Hermit Thrush. Common.

Long Beach, California.

FROM FIELD AND STUDY

The Green-winged Teal (*Nettion carolinensis*) breeding in California.—While engaged in field work for the U. S. Biological Survey along the west shore of Tulare Lake, California, I secured a female Green-winged Teal and set of seven eggs, July 7, 1907. The brooding bird was shot as she flew from the nest. Several other ducks of the same species were seen within a few miles, and appeared to be part of a quite local colony.

This is apparently the first record of the nesting of *Nettion carolinensis* in the State.—E. A. GOLDMAN, *Biological Survey, Washington, D. C.*

Cooper Hawks Attacking Crows.—During the fall of 1907 a flock of crows, numbering perhaps a thousand, frequently came out from the San Francisco Bay shore to spend the day with us at San Geronimo, feeding about the fields and on the hillsides. It happened that about noon on October 27th the flock lit in some trees near our barns. As I came out of the house just after lunch there was quite a commotion in the flock, and it proved that two Cooper Hawks (*Accipiter cooperi*) were attacking the crows, doing some remarkably good team work in their endeavors to lay low one of their dusky enemies. The crows were, however, too alert for the hawks and no loss was inflicted beyond a few feathers. The excitement was so great that I was enabled to walk up on the flock and bag both hawks. One is accustomed to see crows attacking hawks, and it seems rather surprising that the opposite would take place. But in this instance there was no doubt in the world of the true state of the case. The crows were quietly perched on the dead tops of some alders that had been killed by the changing of the course of a small stream, and the hawks deliberately pitched into them, one attacking from above and the other from below. One hawk would perch on top of a tree above the crows while the other would go off a little way and then swoop down on the flock, repeating the operation—with variations. Whether this was all done in a spirit of bravado, or for the purpose of securing a meal, it is of course impossible to determine. My foreman and I watched the game for some time before killing the hawks; then seeing that no damage was being done and fearing to lose the opportunity of destroying such enemies to bird life as the Cooper Hawk has proved itself to be, I walked up to the flock and shot both the members of the attacking party.—JOSEPH MAILLIARD, *San Francisco, California.*

Salpinctes obsoletus pulverius restricted to San Nicholas Island.—After carefully examining specimens from San Clemente Island, Mr. Grinnell confirms my opinion that they are *Salpinctes obsoletus* and that the name *S. o. pulverius* should be restricted to the San Nicholas Island Rock Wren.—C. B. LINTON, *Long Beach, California.*

Odds and Ends From Washington State.—What I call my "Old Curiosity Shop," a succession of weed grown fields bordered by alders, is situated in the heart of the Puyallup Valley in an abundantly watered region. It has done unusually well for me during the past fall and winter, having produced the following records which must be considered very unusual for this State.

The first surprise came on November 7, in the shape of a white-winged Dove (*Melopelia leucoptera*), which proved to be an adult female. Even at this date the feathers were in a surprisingly good state of preservation, removing the very unlikely possibilities of its being a cage-bird. This is the only record of this dove from Washington, and we can hardly surmise what could have driven it so far from its natural habitat.

December 16: I flushed two Golden-crowned Sparrows (*Zonotrichia coronata*) that were in

company with a large flock of Oregon Juncos (*Junco hyemalis oregonus*). I shot one of the sparrows which proved to be a male of the year, thus making certain of the record. On January 15, the remaining bird, also a young of the year, was still in the same weed patch, from which we can confidently assume that it will remain there all the remainder of the winter.

On the same date I took an adult female Northern Red-breasted Sapsucker (*Sphyrapicus ruber nootkensis*) that had the upper mandible two and a half inches long and curving far over to the right. She was very fat and experienced no difficulty whatever in securing her food as I watched her for some time. This she did by using her long upper mandible much as we do a nut pick, digging the insect life to the surface out of deep crevices in the bark, and then picking it up by turning her head completely over on one side.

January 22: Collected a fine adult male Nuttall Sparrow (*Zonotrichia leucophrys nuttalli*), which is my only record for this sparrow in winter.—J. H. BOWLES, Tacoma, Washington.

Some Birds of Ana Capa Island.—On the 4th of September, 1903, I was landed from a yacht onto Ana Capa Island, which lies east of Santa Cruz Island, California, and separated from it by about five miles of open ocean. Ana Capa is rapidly decreasing in size and one can easily foresee its complete dissolution at no very distant time. The action of the waves has already cut thru it at several points. My stay on the Island was limited to less than an hour; but besides that I was permitted to coast along nearly the whole length of the island in a small boat. There is but scanty vegetation on this Island. I saw a few insects, signs of mice (*Peromyscus*), and one species of lizard (*Uta*).

Besides the usual seabirds of the region I saw the following: One Bald Eagle (*Haliaeetus leucocephalus*) flying; one pair of Mexican Ravens (*Corvus corax sinuatus*); several Rock Wrens (*Salpinctes obsoletus*), these being noted on the highest declivities of the Island; several spotted Sandpipers (*Actitis macularia*) along the surf; several Wandering Tattlers (*Heteractitis incanus*) on partly submerged rocks; one flock of five or six Black Turnstones (*Arenaria melanocephala*); one pair, with three two-thirds grown young, of the Black Oystercatcher (*Haematopus bachmani*) on a point of rocks jutting into the surf; and one Belted Kingfisher (*Ceryle alcyon*) flying along the surf.—J. GRINNELL, Pasadena, California.

The Condor in the San Joaquin Valley.—In Part II of the Life History of the California Condor, published in the January-February, 1908, number of your magazine, the range of the California Condor (*Gymnogyps californianus*) is given as being confined mainly to the southern California coast region. They were formerly not uncommon in the southern part of the San Joaquin Valley. During the years 1872 to 1879 I saw condors, or vultures, as they were usually called, soaring over the valley, then a vast range for cattle and sheep. Generally there were not more than two to be seen, but on one occasion I saw three or four. They were seen occasionally during all of the years mentioned. I never observed one with anything in its talons. In the summer of 1879 I saw three condors and about a dozen buzzards about the carcass of a dead sheep between Tule River and Deer Creek, in Tulare County. I drove by slowly at a distance of about fifty yards. The three condors and one buzzard were eating the carcass when I drew near and the other buzzards were a few paces back, as if waiting their turn. I have heard of the condor since in the southwestern part of the San Joaquin Valley, which is still a cattle and sheep range, and do not doubt that they are occasionally to be seen there, where carrion is abundant at certain seasons of the year.

In conversation with Orlando Barton, who has lived for several years in the northwestern part of Kern County, on the eastern slope of the Coast Range, he informed me that he has often seen the condor there. One large bird in particular he saw many times during a period of two years. He often saw it sitting on a large rock within sight of his house and on an abandoned oil derrick in Sunflower Valley. On one occasion he passed within about seventy yards of it when sitting on a boulder. It rose to its full length, and he estimated it to be four and a half feet high. He picked up a feather twenty-one and a fourth inches in length which fell from one of its wings. He saw it several times feeding on dead lambs. He has not seen this or any other condor since 1906.

In conversation recently with W. F. Dean, of Three Rivers, this (Tulare) county, he stated that several years ago, during a dry season, when there were many sheep dying, he saw eight or ten condors in one day in Yokol Valley, 15 to 20 miles east of Visalia. He did not see more than four together. He mentioned the killing of two condors by parties living in the foothills (Sierra Nevada) of Tulare county. He observed two or three of the large birds eating a dead sheep, and surrounded by buzzards at a respectful distance. Mr. Dean has seen no condors in the Sierra foothills for four or five years.—GEORGE W. STEWART, Visalia, California.

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California

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ROBERT B. ROCKWELL }

Hollywood, California: Published May 22, 1908

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States, Mexico, and U. S. Colonies, payable in advance

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other countries in the International Postal Union.

Claims for missing or imperfect numbers should be made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the Editor.

Advertising Rates on application.

EDITORIAL NOTES

The present issue of THE CONDOR contains but one illustration. This will please certain of our constituents who deplore the expenditure of our resources in cuts! But perhaps others of our readers will not be so well pleased. Provided our contributors supply us with good illustrations we propose to continue them as a feature of our magazine. The matter, therefore, rests with those who are in a position to supply the pictures.

Wanted—someone to compile the 10-year Index for THE CONDOR. Remuneration, all the honor and satisfaction attendant upon the completion of the undertaking. Anyone feeling equal to the task, by reason of available time and inclination, correspond with the Editor.

The leading article in *Cassinia* for 1907 is by Witmer Stone and narrates what has been learned in regard to the life and accomplishments of Adolphus L. Heermann, M. D. No one of the early field naturalists of California did more lasting work in ornithology than Heermann. His papers, appearing in the *Journal of the Philadelphia Academy*, and in Volume X of the *Pacific Railroad Surveys*, form our most reliable record of the ornithology of the State at the period of his explorations, 1849 to 1854. It will pay every student of western birds to read Mr. Stone's biography of Heermann.

A new edition of Mrs. Bailey's *Handbook of Birds of the Western United States* is announced to appear early in the fall.

Messrs. Finley and Bohlman left Portland May 1 to make an ornithological tour of Eastern Oregon. They go by auto, having adapted a machine to the carrying of a camp outfit. Their object is, of course, primarily bird photography. CONDOR readers may look forward to seeing some of the results in future issues of our magazine.

The Birds of Washington, announced two years ago as having been undertaken by William Leon Dawson and J. H. Bowles, is reported to be well along towards completion. A lately incorporated feature, to be added to an "Imperial Edition, de grand Luxe", of the proposed work, will be 16 original water color paintings of Washington birds by Allan Brooks. The cost of this edition will be \$350.00 per copy. The work of Allan Brooks is said by those competent to judge to be unexcelled by that of any other bird artist in the world.

We have just received a letter from Mr. Robert Ridgway, dated "San Jose, Costa Rica, April 25, 1908." The following excerpts are of general interest: "The projected trip to the Cerro Turubales was abandoned, and we went instead to Guayabo, at the eastern base of the Volcan Turrialba, and thence to the lecheria at the foot of the cinder zone. Here we spent three miserable days on account of the cold and constant rain. From the lecheria we ascended to the crater, the climb requiring 3 hours and 10 minutes of very hard work; the descent was made in 2 hours. On the summit I found only one bird, *Junco vulcani*; but a little further down, in the chaparral, *Selasphorus flammula* and a *Thryorchilus* were noted. In holes of one of the cliffs of the crater a colony of *Hemiprocne zonaris* were nesting, but how they managed to stand the sulphur fumes I cannot understand. We got no specimens of this bird because, in the first place, the cliff was on the opposite and inaccessible side of the pit, a quarter to half a mile distant; and in the second place, any specimens shot (if that had been possible) would have dropped at least 1000 feet into the abyss where, of course, it would have been the sheerest folly to attempt to go.

"We did fairly well at Guayabo, adding at least two species (and genera) to the Costa Rican list." Mr. Ridgway will shortly return to Washington where he will resume work on the *Birds of North and Middle America*.

The 1908 Alexander Expedition to southeastern Alaska left San Francisco May 18 to be gone until October. The collectors in the party are Miss Alexander, Mr. Joseph Dixon and Mr. Edmund Heller. As in 1907 the object of the explorations will be the collection of mammals and birds, and information concerning their habits and distribution. The material obtained will be deposited in the new museum at Berkeley.

The Museum of Vertebrate Zoology at the University of California was formally established March 23, 1907. As announced in the March issue of this magazine, this new institution has been founded thru the generosity of

Miss Annie M. Alexander, a friend of the University as well as of natural science. The purpose of the Museum is to carry on field and research work pertaining to the vertebrate fauna of the West Coast of North America. Several collectors are already in the field in the interests of the Museum. Besides the Alaskan party referred to above, Mr. Frank Stephens is at work in Eastern San Diego County; Messrs. Walter Taylor and Charles Richardson are collecting in the vicinity of San Geronio Pass; and Messrs. Harry Swarth and J. Grinnell are carrying on field work near Hemet, Riverside County.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MARCH.—The March meeting of the Northern Division of the Cooper Ornithological Club was held in the Oakland Chamber of Commerce, March 7, at 8 P. M., President D'Evelyn in the chair. The minutes of the last meeting were read and approved. The names of J. M. Davis, Alfred Brazier Howell, and W. M. Peterson were read and their election to membership in the club by the Southern Division was approved. The secretary was instructed to learn from the Southern Division as to whether Mr. Davis is a member of the Northern or Southern Division; his address being Eureka, California.

Mr. Emerson, as chairman of the committee on the Clifton resolution, reported that the committee had carried out the instructions of the chair and copies of the resolutions had been forwarded to the Southern Division and to Mr. Clifton.

Mr. Emerson reported that arrangements had been made with Mr. Stearns of the Oakland Chamber of Commerce whereby the Club could keep a register at the Chamber. Further arrangements will be made and reported at the next meeting.

Mr. Gifford proposed the name of J. G. Bliss, 3281 Briggs Avenue, Alameda, California, for membership. Mr. Emerson proposed the name of George J. Obermuller, Haywards, California. Subject to the final vote the names were held over until the next meeting.

Dr. D'Evelyn reported that it had reached his ears that members of the Cooper Club had been prosecuted for dealing commercially in birds and eggs and spoke condemning such acts on the part of any members of the Club. Mr. Emerson then introduced a copy of the accompanying resolutions which after discussion was passed by the Club.

Whereas, It has become known to the Club-at-Large that certain members have been carrying on a commercial trade in birds and eggs in violation to the state protection laws;

Resolved, That the object of this Club was and is for the study and advancement of ornithology only, and the sentiment of this organization does not sanction its members, dealing commercially in birds and eggs.

Resolved, That we the members here present do all that is within our means to uphold the bird-protection laws of California, in conjunction with the State Fish and Game Commissioners.

Resolved, That a copy of these resolutions be spread upon the records of this organization and that a copy be sent to the Southern Division, the State Fish and Game Commissioners of California, and the Audubon Society of said State.

The business of the evening being concluded Dr. D'Evelyn read a paper entitled "Notes on the Waltzing Instinct in Ostriches." Dr. D'Evelyn's personal knowledge of the habits of the ostrich in South Africa filled the paper with interest and it was very pleasing to members of the Club. A copy of the paper has been preserved in the records. Mr. Emerson then read a paper on "The Distribution of the Yellow Warbler." Mr. Emerson illustrated his talk with maps and the skins of warblers taken in various parts of its range. The remainder of the evening was taken up by general bird talk by the members present.

J. S. HUNTER, *Secretary*.

SOUTHERN DIVISION

MARCH.—The regular March meeting of the Southern Division convened at 8:30 P. M. on the 26th, in the City Clerk's Office, City Hall, Los Angeles. President Morcom occupied the chair, and J. Grinnell was elected Secretary *pro tem*. The following members were present: Judson, Miller, Jay brothers, Howard, Willett, Robertson, Linton, Chamberlin, Osborn, Leland, Grinnell and Morcom.

The minutes of the February meeting were read and approved. The name of Arthur Wilcox was proposed for membership, his application being signed by W. L. Chambers. Certain correspondence anent the legality of exchanging and selling specimens of birds and eggs was read and discussed. Mr. Robertson made extended remarks finally suggesting that our Secretary write to the State Fish Commission and ask them to define exactly their attitude toward exchanging and selling. Professor Miller made the motion, seconded by Mr. Jay, that a committee be appointed by the Chair to draw up resolutions expressing the Club's attitude with regard to the State law and bird-collecting, the same to be presented at our next regular meeting. The motion was carried and the Chair appointed Messrs. Miller, Robertson and Grinnell as the committee in question.

A general discussion followed, dealing with a wide range of ornithological topics. Adjourned.

J. GRINNELL, *Secretary pro tem*.

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A Magazine of Western
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Volume X

July-August, 1908

Number 4



COOPER ORNITHOLOGICAL CLUB

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Entered as second-class matter February, 1908, at the post office at Los Angeles (Hollywood Station), California, under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, First National Bank Building, Hollywood, Cal.

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Volume X

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SIERRA FORMS ON THE COAST OF SONOMA COUNTY, CALIFORNIA

By JOSEPH MAILLIARD

WITH TWO PHOTOS BY THE AUTHOR

ON May 11, 1908, I started with my son for a week's collecting trip to a point some 90 miles by rail and stage north of San Francisco, principally for the purpose of ascertaining which form of chickadee would be found breeding there, I expecting to find something very close to *Parus rufescens*—which expectation was fully realized. During the stormy week of our stay at this place, which was on the ridge some 1400 to 1600 feet high just back of Fort Ross, Sonoma County, but two or three miles from the ocean shore, I was greatly surprised to find breeding there birds which one associates only with the Sierra region or the foothills thereof, and not at all with the coast proper. H. H. Sheldon, in *THE CONDOR*, Vol. X, No. 3, has described the finding of nests of the Monterey Hermit Thrush (*Hylocichla g. slevini*) and Western Golden-crowned Kinglet (*Regulus s. olivaceus*) in this same locality; but in addition to these species I found Audubon Warbler (*Dendroica auduboni*) and the Black-throated Gray Warbler (*Dendroica nigrescens*) apparently breeding, and found a junco (*Junco h. thurberi*?) with nests and young. No actual nests of the two above warblers were discovered and only male birds were taken, but from their actions and notes, and from the number of Audubon Warblers, at any rate, flitting about the higher parts of the tall Douglas spruce trees—both sexes being seen—there is but little room for doubt as to their being present for any other purposes than breeding. They certainly did not act like or have the appearance of migrants—and at this season they would of necessity be late ones if in this category—in spite of the fact that these birds are not supposed to breed on or near the ocean shore.

Another surprise was the fact that the *Cyanocitta* of this region—which we might call the South Fork of the Gualala River to the mouth of the Russian River—is vastly different from the Steller Jay of the more northern coast and the Coast Jay

(*Cyanocitta s. carbonacea*) of Marin County, being strikingly similar to the Blue-fronted Jay (*Cyanocitta s. frontalis*) of the Sierras. This is especially strange from the fact that the redwood and Douglas spruce forest of western Sonoma County is practically a continuation of the fir forest of the more northern coast, differing comparatively slightly in humidity and temperature from that part of it where the dark form of *stelleri* is found. Apparently there should be a slight, regular, continuous gradation from the *stelleri* of the North to the form named by Grinnell *carbonacea* or Coast Jay, which extends from Marin down the coast to



MONTEREY HERMIT THRUSH ON NEST; SONOMA COUNTY,
CALIFORNIA, MAY 17, 1908

Monterey County. But instead of this on the Sonoma coast we find a big break, and here, almost on the northern boundary of *carbonacea*—some sixty or seventy miles north of San Francisco, as the crow flies—is a form closely resembling, if not identical with the *frontalis* of the Sierra region, much lighter in color than the form north of its habitat and of that but a few miles south of it, tho the character of the climate and forest which it inhabits has changed but little either way. Breeding specimens of this light form were obtained, and a nest with young discovered.

A couple of days after our arrival in this locality we were joined by H. H. Sheldon and his friend "Fy" Taylor, who had come on a fishing and oological expedition. On the morning of May 15 the boys started in a buggy for a trip

by way of private ranch roads to the North Fork of the Gualala, Sheldon kindly volunteering to take my collecting pistol and try to pick up a few desiderata on the way. When about half way down the grade from the top of the ridge to the South Fork he espied a desirable specimen and jumped out to try and get it. A few yards from the road he ran into a Monterey Hermit Thrush (*Hylocichla g. slevini*) in plain sight on its nest, which proved to contain but one egg. The nest was built in a large dead branch, some twenty feet long, of a bay tree, which had apparently been broken from its parent by the weight of snow in an unusual snowstorm that oc-

curred in 1907, as no wind could have reached so deep in the woods, and was lying almost horizontally with the butt end in the bottom of a little stream and the tip lying against the bank. Mr. Sheldon and his companion left for home the next day, but bequeathed the nest to me. As my time was limited to the 18th it was necessary to visit the nest on the 17th, even tho the complement of eggs might not have been laid. The bird was setting and in full view when the spot was reached, and creeping along the bank, trying to hypnotize the bird with the eye while feeling the way with my feet I set up the camera at a guess of ten feet with the idea in view of a possible enlargement should a good negative result, focussed and took a time exposure. Cautiously moving along with my heart in my throat I tried again at eight feet, timing the light with an actinometer. And yet again at six feet, and the bird never moved! The smallest stop was used and the exposure was *six minutes* in these somber woods, during which I do not believe the bird took her frightened eyes off the camera for an instant. The accompanying photo is an enlargement of this six foot exposure. Gradually creeping along inch by inch, keeping my head covered, and looking under the camera and focussing cloth, I was setting up and focussing at *four* feet when my heel dislodged a stone which fell with a slight crash down the bank and the bird flew. Too bad! I would have liked to hide and wait for her return to the nest, but time pressed and we were far from home, so I took a couple of plates of the nest and eggs in situ before adding them to our collection. It was a great disappointment to me not to have had a telephoto lens along, as here was a fine chance to use one, but an error of a friend at the last moment left me without such an aid.



NEST AND EGGS OF MONTEREY HERMIT THRUSH

San Geronimo, California.

A BIT OF EARLY CALIFORNIA NATURAL HISTORY

By FRANK S. DAGGETT

I RECENTLY came across a set of twenty volumes, published by the author, Dr. John Trusler, entitled "The Habitable World Described". Volume I was published in 1788 and the last one in 1795. They contain many plates and a great amount of information from countries then but little known. Volume VII

contains a description of California "from the Spanish of Michael Venegas, a Mexican Jesuit, published at Madrid in 1758, and others". Of course we are most interested in what he says about animals and birds:

"In California are now found all kinds of domestic animals, commonly used in Spain and Mexico; horses, mules, asses, oxen, sheep, hogs, goats, dogs, and cats. They have been imported from New Spain, and thrive here very well; but here are two species of wild animals, not known in Old or New Spain. The first is that which Californians call *Taye*; it is about the size of a calf, a year and a half old, and greatly resembles it in figure, except in its head, which is like that of a deer, with very thick horns like a ram; its hoof is large, round, and cloven like that of an ox; its skin is spotted like a deer, but the hair thinner, and it has a short tail like a deer; the flesh is very palatable, and, to some, tastes delicious.

"The other animal peculiar to this country is the *Cayote*, or wild dog, very much resembling a fox. Here are also leopards, such as they call lions in Mexico; goats, cats, and wild hogs, are frequently found in the mountains, and (Father) *Torquemada* observes, that, about Monte-Rey are very large bears, tigers, an animal something like a buffalo, and a creature which he thus describes: it is about the size of a steer, but shaped like a stag; its hair resembles that of a pelican, and is a quarter of a yard in length; its neck long; and on its head are horns, like those of a stag; the tail is a yard long, and half a yard broad; and its feet cloven, like the feet of an ox."

"Of birds there are an infinite variety. Among these, for the table, are turtle-doves, herons, quails, pheasants, geese, ducks, and pigeons. The birds of prey are vultures, hawks, falcons, offhages, horn-owls, ravens, and crows. Of night-birds, there are owls, and many others of a smaller kind, not seen in other parts, nor mentioned by any naturalists; nor have the narratives of the Jesuits supplied us with a description, or even with the names of them.

"California has a great variety of singing-birds, as larks, nightingales, and the like, adorned with beautiful plumages. *Torquemada* says, that about the harbour of Monte-Rey are bustards, peacocks, geese, thrushes, swallows, sparrows, goldfinches, linnets, quails, partridges, blackbirds, water-wagtails, cranes, and other birds resembling turkey-cocks, so large as to be 17 palms from the extremity of one wing to that of the other; and also a particular species of gulls, that live on pilchards and other fish, equal in size to a very large goose, their bill a foot long, with long legs resembling a stork, their beak and feet like those of a goose. They have a vast craw, which in some hangs down like the leather bottles used in Peru for carrying water, in which craws they carry what they catch to their young ones. The friendly disposition of these birds is something surprising, for they assist one another when sick or wounded, and bring that bird provision that is unable to search for it. The Indians profit by this; for, when they want a dish of fish, they will wound and tie a gull to a particular spot, conceal themselves, and, when they think all the provision is brought them which other gulls designed, they advance and seize the contribution: such are the mysterious ways of Providence for the support of his creatures!"

"Father *Torquemada* speaking of the island of St. Catherine, in the neighbourhood of California, says, 'In this island are rancherías, or communities, and in them a temple, with a large, level court, where they perform their sacrifices; and in one, was a large circular space, the place of the altar, with an enclosure of feathers of several birds of different colours; which I understood,' says he, 'were those of the birds they sacrificed in great numbers: and within the circle, was an image, strangely bedaubed with a variety of colours, representing some devil, ac-

according to the manner of the Indians of New Spain, holding in its hand, a figure of the sun and moon. It happened, that when the soldiers came to see this temple, they found within the said circle, two crows, considerably larger than ordinary; which at the approach of the Spaniards flew away, but alighted among the rocks in the neighbourhood. The soldiers seeing them of such uncommon size, fired their guns and killed them. At this, an Indian, who had attended the Spaniards as a guide, fell into an agony. I was informed that they believed the devil spoke to them in these crows, and thence held them in great veneration. Sometime after, one of the soldiers going that way, saw some Indian women washing fish on the shore, but some crows came up to them, and with their beaks, took the fish from their hands, whilst they observed a profound silence, not daring so much as to look at them, much less frighten them away. Nothing therefore could seem more horrible to the Californians, than that the Spaniards should shoot at these respectable birds.'"

Chicago, Illinois.

SUMMER BIRDS OF THE UPPER SALINAS VALLEY AND ADJACENT FOOTHILLS

By G. WILLETT

THE following notes were taken from May 23 to June 3 of this year in the Upper Salinas Valley and surrounding hills along the Monterey and San Luis Obispo county line.

Owing to the short time given me for observation the appended list is undoubtedly very incomplete. Also owing to the semi-arid nature of this particular section many birds that are common a few miles away are found here rarely or not at all. For instance I did not note a single species of warbler altho I know that several species breed within a few miles. I visited this locality about fourteen years ago and I find the distribution of several species of birds considerably changed during that time.

In the Salinas river bottom, which at San Miguel has an elevation of about 800 feet, are extensive groves of cottonwoods and willows; and the surrounding hills, which run up to an elevation of over 2500 feet, are covered with large oaks and scattering groves of pines.

***Ardea herodias*.** Great Blue Heron. Common in river bottom.

***Ardea virescens anthonyi*.** Anthony Green Heron. Green Herons probably of this species were common in river bottom but no specimens were taken.

***Ægialitis vocifera*.** Killdeer. Common along streams.

***Lophortyx californicus vallicola*?** Valley Partridge. Abundant, with half-grown young. Owing to close season I took no specimens and am in doubt as to subspecies as this must be about the dividing line between *L. californicus* and *L. c. vallicola*.

***Columba fasciata*.** Band-tailed Pigeon. A small flock seen in the hills on Monterey side at about 2500 feet.

***Zenaidura macroura*.** Mourning Dove. Abundant.

***Gymnogyps californianus*.** California Condor. I saw this species in this vicinity fourteen years ago but saw none at this time altho I kept a careful lookout for them.

Accipiter cooperi. Cooper Hawk. A nest containing young found May 29 in the foothills on the Monterey side.

Cathartes aura. Turkey Vulture. Common.

Buteo borealis calurus. Western Red-tail. Common in oak-covered hills.

Buteo swainsoni. Swainson Hawk. Common everywhere.

Aquila chrysaetos. Golden Eagle. Seen occasionally.

Falco mexicanus. Prairie Falcon. Seen occasionally.

Falco sparverius. Sparrow-hawk. Very common.

Strix pratincola. Barn Owl. Common.

Asio wilsonianus. Long-eared Owl. One taken in river bottom June 3rd.

Bubo virginianus pacificus? Horned Owl. A horned owl seen in river bottom.

I am not sure as to subspecies.

Speotyto cunicularia hypogæa. Burrowing Owl. Fairly common.

Geococcyx californianus. Road-runner. Not common.

Dryobates villosus hyloscopus. Cabanis Woodpecker. Common in river bottom.

Dryobates pubescens turati. Willow Woodpecker. Common in river bottom.

Dryobates nuttallii. Nuttall Woodpecker. Common everywhere.

Melanerpes formicivorus bairdi. California Woodpecker. Very common in oaks but not so abundant as formerly.

Colaptes cafer collaris. Red-shafted Flicker. Common.

Aeronautes melanoleucus. White-throated Swift. Frequently seen.

Calypte anna. Anna Hummingbird. Common.

Tyrannus verticalis. Arkansas Kingbird. Abundant.

Myiarchus cinerascens. Ash-throated Flycatcher. Common.

Sayornis saya. Say Phoebe. Common in foothills.

Sayornis nigricans. Black Phoebe. Common.

Contopus richardsonii. Western Wood Pewee. Very common.

Empidonax difficilis. Western Flycatcher. One taken in oaks, June 1.

Otocoris alpestris, subsp.? Horned Lark. Horned Larks were seen several times but no specimens were taken.

Pica nuttalli. Yellow-billed Magpie. This species, altho abundant in this territory fourteen years ago, is now scarce. I succeeded in finding one small colony of 20 or 30 pairs with nearly grown young. I am at a loss to account for the great decrease in numbers of this species as I do not think they are killed in any great numbers. Two specimens out of twelve which I took were afflicted with intestinal parasites which may be one cause of their depletion.

Aphelocoma californica. California Jay. Common.

Corvus americanus hesperis. California Crow. Common in river bottom.

Agelaius phoeniceus neutralis. San Diego Red-wing. Red-wings seen occasionally but none taken.

Sturnella neglecta. Western Meadow-lark. Abundant.

Icterus bullocki. Bullock Oriole. Abundant.

Scolecophagus cyanocephalus. Brewer Blackbird. Common.

Carpodacus purpureus californicus. California Purple Finch. Common on shady sides of higher hills.

Carpodacus mexicanus frontalis. House Finch. Common.

Astragalinus tristis salicamans. Willow Goldfinch. Common in river bottom.

Astragalinus psaltria. Arkansas Goldfinch. Abundant.

Passer domesticus. English Sparrow. Common around towns.

Chondestes grammacus strigatus. Western Lark Sparrow. Very common.

Pipilo maculatus megalonyx. Spurred Towhee. Common.

Progne subis hesperia. Western Martin. Common. Mostly around settlements.
Pipilo fuscus crissalis. California Towhee. Common.
Zamelodia melanocephala. Black-headed Grosbeak. Common.
Cyanospiza amœna. Lazuli Bunting. Rather common in river bottom.
Petrochelidon lunifrons. Cliff Swallow. Common.
Tachycineta bicolor. Tree Swallow. Common in river bottom.
Tachycineta thalassina lepida. Violet-green Swallow. Very common.
Riparia riparia. Bank Swallow. Common.
Phainopepla nitens. Phainopepla. Not rare.
Lanius ludovicianus gambeli. California Shrike. Common.
Toxostoma redivivum. California Thrasher. Common.
Troglodytes aedon parkmanii. Parkman Wren. Common.
Sitta carolinensis aculeata. Slender-billed Nuthatch. Common among oaks.
Parus inornatus. Plain Titmouse. Common.
Chamaea fasciata. Pallid Wren-tit. Not rare.
Psaltriparus minimus californicus. California Bush-tit. Common.
Polioptila cærulea obscura. Western Gnatcatcher. Abundant.
Sialia mexicana occidentalis. Western Bluebird. Very common.
Los Angeles, California.

FIELD NOTES FROM ALASKA

By JOSEPH DIXON

(EDITORIAL NOTE.—Mr. Dixon is a member of the 1908 Alexander Alaska Expedition, which is now making zoological collections in the Prince Williams Sound region of southern Alaska.)

Hinchinbrook Island, Prince Williams Sound, Alaska, June 26, 1908.—We are camped at the head of a little unnamed bay on the northeast side of Hinchinbrook Island. There is the usual salmon creek emptying into the head of the bay. On either side of the creek there is a swamp of devil club and tall salmon berry bushes, while large spruce trees are sprinkled evenly over this swamp. These trees prove an aggravation to the collector every day as the Ruby-crowned Kinglets and Crossbills flit around in the top branches of them and laugh at us. They are out of range of anything smaller than number four shot and if I did get one, the chances are nine out of ten that it would lodge on one of the thick, spreading, moss-covered branches.

The other folks say that there are stacks of fox sparrows there but no one has brought in more than two of them at any one time. Varied and Hermit Thrushes are about as common as usual but the Varied Thrushes are rather wary and most of them are feeding young ones now.

It has not rained for some three weeks which is a terribly long dry spell for this country. The days have been warm and often sunshiny affording a fine opportunity for us to dry our skins especially the larger ones. This warm weather has also brought on swarms of mosquitoes and clouds of little sand flies. The mosquitoes have five grayish white bands around their abdomens which gives them a zebra-like appearance; but they are the most blood thirsty lot that I have ever met, for they no sooner noiselessly light on one than they begin to probe and they never stop until they reach bottom. I have had them bite thru a heavy flannel shirt and heavy wool underwear, but "duxbak" clothing is too much for their sharp bills.

By wearing a head net inside of a bed net and then closing the tent up tight we manage to sleep without being caressed by the "skeeters." It is almost impossible to work outside of mosquito nets even inside of the tightest tent. Burning buhack usually drives them out; but almost all of our endeavors to evade them have been futile. The sandflies are so small that the net will not stop them and their bite feels like some one running a hot needle in one's arm. Any account of these small insects may seem trivial but they certainly have made us feel their importance. It is humiliating to be driven out of the woods by such small creatures when hunting for bear; but it would not be much worse to be eaten all at once than to be devoured daily by these gauzy-winged "hellets". Then too their bites are always itching and I will scratch them in my sleep. These make ideal material for arsenic sores. Enough for our pains, so let us look to some of our pleasures.

While we were working at Canoe Passage on Hawkins Island, Miss Alexander found a Northern Bald Eagle's nest and thought from the actions of the parents that the nest must contain young. The nest was an immense affair; eight by ten feet in diameter, measured with a steel tape that had no rubber in it! It was placed in a large hump-backed hemlock tree that stood near the point of a low sand spit. There were but very few limbs on the rough moss-covered tree trunk which was too big to "hug" up, so we went down a couple of days later with cameras, ropes and an ax. As we approached the nest one of the old white heads came sailing over from his watch tower on an old dead hemlock. When he came to a spot above the nest he hovered up against the wind for a minute while he uttered a few anxious chuckle-like notes. Both birds seemed quite threatening but it was only a bluff as they cleared out entirely when I began climbing the tree. We managed to get a rope over the first limb and after I had tied it around me, Mr. Hasselborg began to hoist away so that together with his pulling and my scratching I managed to reach the first limb. Then after I had thrown the rope over the next limb the pulling and scratching began again and continued until I had reached the nest where I was surprised to find *three* instead of two young fuzzy eaglets as I had expected. They could not have been more than two weeks old as the largest of the three did not weigh more than a pound. The smallest one was not much more than half the size of the largest one. They seemed to not be at all afraid of me and surveyed me with curiosity only. Then they snuggled up in the moss that lined the nest and went to sleep. The nest was evidently an old one as a large currant bush twined its green branches over one side of the nest. It must support at least a ton of snow during the winter so I got out and walked around in it after taking some photos of the eaglets. I hope to be able to raise them and get a life history series of photographs.

Grouse seemed to be quite common about the high wooded knolls near the beach. They are very different from the grouse that we got last year. They are much smaller and darker. Mr. Heller thought that it was the Franklin Grouse but I do not think that it is. None of them have more than sixteen tail feathers; so I suppose that they belong to the genus *Canachites* and are probably the Alaska Spruce Grouse but as we have no description of this form, I cannot be sure. The comb is not orange colored, but almost a cardinal hue. The upper tail coverts are not strikingly barred but have the same appearance as the rest of the upper parts. They stay in the dark woods and scarcely ever flush unless we almost tramp upon them.

The country about Canoe Passage on Hawkins Island was low and rolling with large open parks bordered by wooded creeks. There were a number of lagoons almost shut off from the Bay by long grassy gravel bars. One mountain in the in-

terior of the Island was 1900 feet above the sea according to the aneroid. Hutchins Geese were nesting about these lagoons and about the twentieth of June goslings were everywhere. It was strange how they all hatched out so near the same time. I was wandering home one evening about 10 o'clock. It was just after sundown but the deeper woods were beginning to darken slowly. It was high tide so that I had to make a cut clear around the head of a slough. Just as I came out of the thick huckleberry underbrush in the strip of timber, I stumbled over a log and almost fell on top of an old goose that was sitting on a nestful of eggs. She made a terrible racket as she went flopping and squawking off the nest and I do not know which of us was the worst scared for a minute. The nest was placed in the open close to the trunk of a large tree just at the edge of the wood. It was lined with moss and down and held six eggs which I afterwards regretted were almost ready to hatch.

We took a trip up on the mountain after Ptarmigan and were fortunate in securing two males.

The mountain appeared to be higher than it really was because timberline was only about 1000 or 1200 feet. The summit of the mountain down for three or four hundred feet was wrapped in mist which a chill wind kept sweeping up from the south. This made it very hard to locate the birds as they sat around on the brownish-grey lichen-covered stones and would not flush unless one almost walked upon them. Most of the feathers on the upper parts of the birds were brownish but the summer plumage was not much more than half complete at this date.

Old worn bear trails were commonly met leading to the salmon creeks but the bears have been gone for several years at least, as we only saw one fresh track. The country was so open that hunting was too easy for them to last. Mr. Heller found a flock of White-winged Crossbills and secured several.

There is a very large dark song sparrow here which is darker than any that I remember. I have never seen any specimens of that Kenai form so I do not know whether it is that or not. The Fox Sparrows have been so split up that it would be hard to tell what this form is without material for comparison but anyway we will have a large series of both from the various islands so that it can be decided when we get back. Mr. Hasselborg secured that long-looked-for *Leucosticte* the other day with his "bear" gun and dust shot. The grey of the crown comes down covering the sides of the head so I take it to be the Hepburn *Leucosticte*. These birds seem to always stay around the very summits in the crags and rock slides. This one was secured about 1000 feet above timber line. Miss Alexander saw another *Leucosticte* within easy range but it was sitting on the brink of an impassable drop-off so she refrained from shooting at it. Miss Kellog secured a fine male Ptarmigan which is in the best feather of those yet taken.

La Touche, July 16, 1908.—We just blew in here from Green Island late last evening. We decided to leave Hinchinbrook Island on the fourth of July as there were indications of fair weather and a favorable wind. We broke camp at four o'clock in the morning but got stuck on a bar as we were passing out over the tide flat, so we had to spend the whole morning waiting for the tide to turn again with a glorious breeze going to waste. We got off again about one o'clock and safely crossed Hinchinbrook Entrance to Montague Island in the afternoon. As the wind died out we were forced to anchor at the entrance of Zaikof Bay for the night. We had a taste of a "wooly" in the morning which sent us flying down the Bay. We just got all our stuff off the boat when a good healthy rain storm set in and the tents, which had been taken down while wet, leaked like cheese cloth. Mr. Heller said that Montague Island should have been named *Microtus*

Island and it certainly would have been very appropriate, as meadow mice simply overrun the entire island from the beach clear up to the very summit of the highest peak that we were on (2500 ft.). They are large fellows almost as big as a gopher and are evidently the "grey squirrels" that we hear about that are overrunning Montague. On the whole I was rather disappointed in Montague. Altho the island lies well exposed to the ocean it is comparatively cold, and barren in number of species. This is probably due to the snow which even now lies in thick slides along the whole range of mountains that forms the backbone of the island.

I secured one Ptarmigan and saw another, but both of them were exceedingly wild. Ground hogs (Hoary Marmots, or Whistlers) were very shy on the mountains so we did not succeed in getting any. Hasselborg secured another *Leucosticte* and two Redpolls. The *Leucosticte* was one of a pair that we watched for some time as they flitted about the cliffs and rock slides. I am quite sure that they had a nest in a cliff as they kept returning repeatedly to the same spot. I examined the stomach of the bird that was shot and found that the majority of the contents was of a vegetable and not an insect nature. Sprouting buds of some small plant was the chief item. The Ptarmigan were lying close under some scrub spruce trees just at the upper edge of timber line. They are almost in full summer plumage by this time. I cannot understand why we never find any female Ptarmigan. I know that they are there but I have never yet seen one as all that I have yet secured have been males.

The three little eaglets that I worked so hard to get are all dead now. The two biggest ones pecked the little one to death. Then the largest one slew his brother and in turn was accidentally drowned the other day. I secured two half-grown eagles from a nest on Hinchinbrook Island and have the largest one still. I may be able to get some more if he should die but he is a good sailor and unless the canoe capsizes or we get some place where there is no meat, I think that the "Villian" will survive. The young eagles are clothed in a white down at birth. In about three weeks this white down begins to disappear and is replaced by a coarser sooty grey down which remains until the feathers come in and the bird weighs ten pounds or so. The Duckhawks that I raised last year did not go thru this sooty-gray-down stage but changed their coats of white down for one of feathers direct. I never saw such hard things to dry as young eagle skins. They won't even dry in the sun. They just rot. We have had trouble in drying our small birds as we only stop a week or so at a time and the collecting chests are full of small mammals. We either have to dry the bird skins in a hurry or else pack them around green. If they dry too rapidly the unequal heat from the stove causes them to warp as the side that is toward the heat dries first and shrinks pulling the tail around. If they are packed in a box, even very carefully, while green they are bound to get out of shape. I may be too cranky about the skins coming out well but I hate to put a good skin away and find it all dried out of shape later. A perfect or nearly perfect skin is a joy forever, especially from a place like this where it is almost impossible to secure good skins.

Green Island is low and the vegetation comes on early. Many of the land birds such as the Hermit and Varied Thrushes have families of youngsters flying about as have also the Song and Townsend Sparrows. As we came down the channel along Green Island we ran into a feeding ground of Puffins. There were literally swarms of them. The Horned Puffins were perhaps the more numerous but there were hundreds of their dark-bodied cousins with long flaxen curls. One of the two species makes a very odd sound while feeding. It is a series of droll Aw! Aw! Aws! , deep and long drawn out. It sounds as tho they were making fun

of some one as much as to say "Aw! Aw! I don't believe it." Mr. Heller suggested that it sounded like the subdued notes of a California burro!

We had a couple of bright days on Green Island and the mosquito and "no see" flies increased about a thousand fold. The mosquitoes were worse at night; but by getting inside of two or three nets arranged inside of each other, one could get a little sleep. All self-respecting flies are supposed to cease from their blood letting by night time but this particular breed was so industrious that they simply swarmed into the tent and no mosquito net is fine enough to stop them. It was useless to try to kill them and their bite feels like fire and swells up like baking powder biscuits. At last I wrapped my head up in the blankets and then about smothered but I was away from the pesky flies.

We must make another try at Montague as we have no bear from there yet. Then we will work the islands east of here until we strike the Kenai Peninsula where we ought to get some good big game hunting.

La Touche, Alaska.

THE NESTING OF THE ROCKY MOUNTAIN SCREECH OWL IN WYOMING

By CHAS. W. METZ

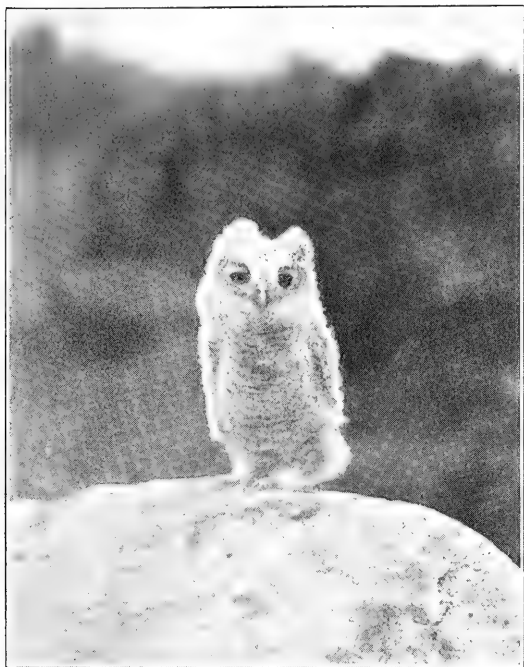
WITH FOUR PHOTOS BY THE AUTHOR

SO far as I know, no collector has reported the nesting of the Rocky Mountain Screech Owl (*Otus asio maxwellie*) in Wyoming. A few notes taken by me in the northern part of the State, may, therefore, not come amiss. The first nest was found May 30, 1906, the old bird being flushed from a bush



NESTING SITE OF ROCKY MOUNTAIN SCREECH OWL (in tree trunk to right of picture)

in a fairly thick grove of box elders. A search thru several hollow trees in the vicinity soon revealed the nest. It was situated in a hollow limb of a live box



NESTLING OF ROCKY MOUNTAIN SCREECH OWL:
IN A WIND

a fledgling with the old bird a few days later, I am pretty sure that this was the nest.

The third nest I was able to visit several times and my notes, accordingly, are more complete. This nest, apparently an old flicker's hole, was in a small cottonwood stump, about fifteen feet up; the stump being very rotten, and leaning directly over a mountain stream, it was not a very safe place for a family of young birds.

I found this nest on June 4, 1907, by rapping on the stump; the owl responded by pecking out of the hole and promptly dropping back again. As I suspected young birds to be in the nest, I returned on June 10, with my camera. I enlarged the opening a little and put my hand in. The lady of the house was in possession;

elder, about twenty-five feet from the ground, and contained one young bird almost ready to leave the nest. The cavity, which was in the end of the limb, was about five inches across at the top and about two feet deep; it sloped at an angle of about thirty degrees, for a short distance, then went off in a horizontal direction; it was back here that I found the bird. While I was at the nest, the old bird, presumably the female, lit a few feet from me, but did not show much anxiety, except to snap her bill occasionally.

The second nest was found on May 28, 1907. I flushed the adult from the hollow, but, on account of the size of the tree, I could not get into it. The cavity was in the center of a huge cotton-wood stump about three feet in diameter, and fifteen feet high; it was over a foot wide at the top and nearly ten feet deep, so it was almost impossible to get into it. However, as I saw



YOUNG ROCKY MOUNTAIN SCREECH OWL

for awhile it seemed as tho she would retain it, for the way she clawed up my hand while I was removing her, is something I shall not forget soon. However, when I let her loose, or rather got her loose, she quickly flew out of sight and was seen no more. Turning again to the nest I found three fledged young, as large as the old bird. I certainly cannot see the reason for her staying on the nest; for the young birds were nearly suffocating each other in the narrow cavity. These youngsters were as good subjects for the camera as a person could want, except possibly their



YOUNG ROCKY MOUNTAIN SCREECH OWL; IN MOUNTAINS NEAR SHERIDAN,
WYOMING, JUNE 16, 1907

tendency to turn over on their backs, with their claws waving in the air, and show fight.

I took several pictures of them at different distances, and in different positions; the difference that this makes in the looks of the birds, is interesting to note.

Two of the birds soon disappeared, but the third remained in the nest for about two weeks; I hope he has safely reached maturity, for, in the visits I made the little fellow, I became quite attached to him.

Sheridan, Wyoming.

BIRDS ON THE NAVAJO RESERVATION IN NEW MEXICO

By M. FRENCH GILMAN

IT was my fortune to be stationed at Shiprock Agency on the San Juan river in Northwest New Mexico for seven months; and herewith are presented what bird notes I made in that period. The time, from February 1 to September 1, 1907, was favorable; but stress of duty prevented my doing as much field work as I desired.

The Indian School was situated in a cottonwood grove not far from the river at about 5500 feet altitude. Along the river both above and below the school were other groves of the common cottonwood, with a few of the narrow-leaved cottonwood, some willows (two species) and an occasional shrub of *Rhus trilobata* and *Adelia neo-mexicana*. Outside the groves scattered along the river were patches of brush such as *Sarcobatus*, *Artemisia*, chico-brush, rabbit-brush and *Senecio*.

The river bottom was bounded by bluffs from 50 to 75 feet high: in places the water flowing against the rocky wall and again a strip half a mile wide intervening. Back from the bluffs were mesas, barren except for a sparse growth of bunch grass with a few scattered specimens of stunted *Artemisia* and *Senecio*. During summer there are patches of color in suitable places on these mesas; the white of the "snow-ball", *Abronia*, purple of *Phacelia glandulosa*, yellow of *Senecio douglasi*, and crimson of a *Malvastrum*. Much of the country was level and for miles in any direction not enough growth to hide a rabbit could be seen.

In uncultivated fields along the river sprang up a dense growth of sunflowers, purple bee-plant, *Peritoma serrulatum*, and yellow bee-plant, *Peritoma luteum*, many of them higher than a man's head. The pestiferous Russian thistle formed an undergrowth among the taller plants, while the lowly *Abronia fragrans* furnished a pleasant contrast to the mal-odorous bee-plant.

About ten miles south of the river, from a level plain, rose a rock, schooner-shaped (nautical, not Milwaukee schooner) to the height of 1600 feet. This was called Shiprock and gave the name to the Agency and postoffice. Thirty-five miles south of the river were the Chusca Mountains with an altitude of between nine and ten thousand feet. The foothills at their base were covered with heavy growths of pinyon and juniper with some *Yucca baccata*, *Cercocarpus* and *Purshia tridentata*. As the altitude increased this growth gave way to the Rocky Mountain pine and a few scrubby oaks. Along the north slopes of the summit of the range were dense groves of quaking aspens and near water in the higher altitudes were some paper-leaf alder and service berry.

Only one permanent stream of water was found and that not as large as a small irrigating head. A number of springs were seen in the deeper canyons, and stream-lets from these flowed a few rods and sank.

During spring, ducks and other water and shore birds were seen in small numbers along the river but as they were traveling and hard to obtain I gave them scant attention. Most of the commoner species of ducks and a few gray geese were seen. One Egret, and several each of Killdeer, Western Willet, Greater Yellow-legs, Snowy Heron, Great Blue Heron, Black-crowned Night Heron, and Bittern were seen. I was disappointed at seeing so few birds in the country. Of some species only one was noted and of others only two or three. Only five days were spent in the Chusca Mountains, so little work was done there. The following list of land birds is probably far from complete but will give some idea of the bird life of that region. Unless otherwise specified all records refer to Shiprock, along the San Juan river. All

mention of mountains means the Chusca range, while river, of course, is the San Juan, a muddy, turbulent, treacherous stream.

Acknowledgments are due Mr. Joseph Grinnell for identification of doubtful species and subspecies.

Lophortyx gambeli. Gambel Partridge. A friend living at Aztec several miles from Shiprock, up the river, told me one of these birds spent part of one winter around his haystack.

Meleagris gallopavo merriami. Merriam Turkey. Turkeys, probably this variety, are said to be rather common in the oak, pinyon and juniper zone at the west end of the Chusca Mountains. Indians frequently bring them for sale to the post traders' stores near the mountains, but they usually remove wing and tail feathers at least, before delivering.

Zenaidura macroura. Mourning dove. A few stay all winter along the river. In summer they become very numerous, frequenting the sunflower and bee-plant thickets, probably eating the seeds. They nest freely in cottonwood groves along the river and also in the shrub patches.

Cathartes aura. Turkey Vulture. Common in early spring and in late summer and autumn.

Accipiter cooperii. Cooper Hawk. Seen occasionally in groves along the river where they seem to prey upon the doves.

Buteo borealis calurus. Western Red-tail. Seen along the river bluffs where they nest, and also back in the mountains. Fairly common.

Buteo swainsoni. Swainson Hawk. Noticed among the groves but not numerous.

Archibuteo ferrugineus. Ferruginous Rough-leg. Three seen: one along the river and two at "One-Eye-Water" spring, about fifteen miles south of the river.

Aquila chrysaetos. Golden Eagle. Seen occasionally. A pair nested on a bluff a few miles up the river from Shiprock.

Falco mexicanus. Prairie Falcon. A few noted but they seem rare.

Falco columbarius. Pigeon Hawk. Two seen among the cottonwoods, one of which was secured.

Falco sparverius. Sparrow Hawk. Common along the river bluffs and the rocky buttes on the desert plains.

Asio wilsonianus. Long-eared Owl. Two seen several times in a thicket of willows and "squaw-bush," *Rhus aromatica*.

Bubo virginianus pallescens. Western Horned Owl. Heard several times in the mountains but not seen.

Speotyto cunicularia hypogaea. Ground Owl. Seen on the mesas back from the river. Noticed an entire family, eight or nine, in the shade of a bush several feet from the hole one hot day.

Dryobates villosus monticola. Rocky Mountain Hairy Woodpecker. Resident in groves along the river and also in the mountains. A pair nested in a cottonwood not far from the school and the male in particular displayed much anxiety whenever the nest tree was approached. Several times he followed me from tree to tree for a number of rods, calling down maledictions on my head.

Dryobates pubescens homorus. Batchelder Woodpecker. Nesting in groves near the river. Not numerous.

Sphyrapicus thyroideus. Williamson Sapsucker. Two young males seen in the pinyon belt on the Chusca Mountains.

Colaptes cafer collaris. Red-shafted Flicker. Found in winter and early spring

along the river. Later and more numerous, in the mountains. A yellow-shafted one was seen but not secured, so its identity remains doubtful.

Chordeiles virginianus henryi. Western Nighthawk. A few seen during spring and summer.

Trochilus alexandri. Black-chinned Hummingbird. Fairly common near the river, tho more numerous among the pinyons and junipers of higher altitudes.

Selasphorus platycercus. Broad-tailed Hummingbird. Not common. Only a few seen.

Tyrannus verticalis. Western Kingbird. Common, nesting in all the groves.

Tyrannus vociferans. Cassin Kingbird. A few seen in early spring, apparently not nesting.

Myiarchus cinerascens. Ash-throated Flycatcher. Abundant everywhere and nesting in deserted woodpecker holes.

Sayornis saya. Say Phoebe. Not numerous, but a few seen thruout the country from the river to the mountains.

Contopus borealis. Olive-sided Flycatcher. Quite numerous during spring migration. The first was seen May 19, and the latest date was June 16, when three were noticed.

Empidonax wrightii. Wright Flycatcher. Noted frequently during April and May.

Otocoris alpestris leucolæma. Pallid Horned Lark. Common everywhere. A certain place in the river, where the water spread out and formed several small streams, was a favorite watering place, and flock after flock came to drink every day. All springs on the mesas and plains were frequented by these larks in great numbers.

Pica pica hudsonica. Black-billed Magpie. Common all along the river and nesting everywhere, even in trees in the school yard. I was much interested in a one-legged old "maggie," we called her Peggy, who was building in a tree just in front of my window. I was told that she had nested near the buildings the three years preceding. The old nests were much in demand for roof-trees by the English sparrows, and to a less degree by house finches. But I thought the limit was reached when we found in one, a nest of four young of *Felis domestica* (pussy-cat). They were discovered by seeing the kittens peering from the nest which was sixteen feet from the ground.

Cyanocitta stelleri diademata. Long-crested Jay. Several seen among the pines and spruces in the mountains in July.

Aphelocoma woodhousii. Woodhouse Jay. One seen on the La Plata river in February. Two seen in the pinyons on the Chusca mountains in July, and two at Shiprock in August. They seem erratic in their range.

Corvus corax sinuatus. American Raven. Fairly common; nesting on bluffs along both sides of the river.

Nucifraga columbiana. Clarke Nutcracker. Two seen in the Chuscas in October, 1906, and a young male secured near the same spot in July, 1907.

Cyanocephalus cyanocephalus. Pinyon Jay. Two small flocks seen at Shiprock. I found the birds quite common in the pinyons and junipers on the hill.

Molothrus ater. Cowbird. Common. An egg found in a western gnatcatcher's nest along with two of the rightful owner's eggs.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Seen occasionally near the barn yards.

Agelaius phoeniceus. Red-winged Blackbird. Seen frequently on flooded land.

***Sturnella neglecta*.** Western Meadowlark. Common in all cultivated neighborhoods.

***Icterus bullocki*.** Bullock Oriole. A few pairs nesting in the cottonwood trees.

***Scolecophagus cyanocephalus*.** Brewer Blackbird. Common. Contesting the supremacy of the barnyard with English sparrows.

***Carpodacus mexicanus frontalis*.** House Finch. Numerous in brush areas, and disputing with English sparrows for the choicest nesting places near the house. They seemed to hold their own in a scrap till the ratio became four or five sparrows to one finch, and a retreat was sounded. The finches nested closer to the house than did the sparrows, and nests were also found out in the artemisia and the groves. A favorite nesting place was the globe of a gas jet. I noticed five of the globes on the porches thus occupied. Several times I found sticks and strings on the floor of my room, and watching quietly one day, saw a pair of the finches enter the open window and try to start a nest in the globe of my gas jet. But the inside globes were different from those on the porches and the material always fell out.

***Astragalinus tristis pallidus*.** Pale Goldfinch. Seen a few times. Not at all common.

***Astragalinus psaltria*.** Arkansas Goldfinch. Seen oftener than *pallidus* but not numerous. Present during breeding season.

***Spinus pinus*.** Pine Siskin. Several seen along the river in April and six in the mountains in July.

***Passer domesticus*.** English Sparrow. Very numerous at Shiprock. Nested in old magpies' nests, deserted woodpecker holes, cornices of buildings, and in fact any old place so it was not far from a house or a barn. Did not stray far from cultivation. Were fond of young lettuce and did damage to it that was charged to the account of neighbor's hens.

***Poœcetes gramineus confinis*.** Western Vesper Sparrow. Common about the fields.

***Chondestes grammacus strigatus*.** Western Lark Sparrow. One of the most numerous birds to be seen; arriving about May 1st.

***Zonotrichia leucophrys*.** White-crowned Sparrow. Fairly common during winter and early spring.

***Zonotrichia leucophrys gambeli*.** Gambel Sparrow. Not so numerous as the white-crowned.

***Spizella monticola ochracea*.** Western Tree Sparrow. Common in the brush areas in winter and early spring.

***Spizella socialis arizonæ*.** Western Chipping Sparrow. Common resident.

***Spizella breweri*.** Brewer Sparrow. Noticed frequently among low weeds during springtime.

***Junco hyemalis*.** Slate-colored Junco. Two seen in March.

***Junco hyemalis connectens*.** Intermediate Junco. Common in winter and early spring.

***Junco mearnsi*.** Pink-sided Junco. Not so common as the preceding.

***Junco caniceps*.** Gray-headed Junco. Seen along the river in early spring and in the mountains in July, where they may nest, as young birds were noticed.

***Amphispiza bilineata deserticola*.** Desert Sparrow. Seen along the river and also out on the desert wherever enough vegetation could be found.

***Amphispiza nevadensis*.** Sage Sparrow. Rare. Seen only twice, out on the desert near a sulphur spring.

***Melospiza melodia montana*.** Mountain Song Sparrow. Common along the river.

Melospiza lincolni. Lincoln Sparrow. A few seen in February and March. Caught one in the carpenter shop one windy morning.

Pipilo maculatus megalonyx. Spurred Towhee. Young and adults seen in the pinyon and juniper zone in the Chusca mountains. Seemed to be not common.

Oreospiza chlorura. Green-tailed Towhee. Common at Shiprock during spring migration. Seen among the pinyons and pines on the mountains.

Zamelodia melanocephala. Black-headed Grosbeak. Common. Breeding at Shiprock in the cottonwoods, and also in the pine belt in the mountains.

Guiraca cærulea lazula. Western Blue Grosbeak. Three seen August 16, feeding on ripening sunflower seed.

Cyanospiza amœna. Lazuli Bunting. One seen along the river in August.

Calamospiza melanocorys. Lark Bunting. Seen once, when a flock of about thirty was encountered on a showery afternoon, June 2nd.

Piranga ludoviciana. Western Tanager. A few at Shiprock in May, and also in the mountains in July.

Petrochelidon lunifrons. Cliff Swallow. Common. A big colony nested on a bluff overhanging the river. Fifty nests were counted. It was a nesting site secure from marauders, but sure destruction for the precocious nestling who fell out of the nest. A few of the swallows were seen also at a Navajo "hogan" or house, near the foothills.

Hirundo erythrogastra. Barn Swallow. A few seen in June.

Tachycineta thalassina lepida. Violet-green Swallow. Very numerous near the river before nesting time. Seen in the mountains in July, from the pinyon belt up to and extending into the pines.

Stelgidopteryx serripennis. Rough-winged Swallow. A few seen along the river and also in the edge of the pinyons.

Ampelis cedrorum. Cedar Waxwing. One seen in a cottonwood tree near the schoolhouse May 27th.

Lanius ludovicianus excubitorides. White-rumped Shrike. Seen occasionally in *Sarcobatus* thickets along the river. A juvenile caught under a "deadfall" set for rats and squirrels near the edge of the junipers. He was probably after the bacon rind bait.

Vireo solitarius plumbeus. Plumbeous Vireo. Seen several times at the river and also found later in the mountains.

Vireo gilvus swainsoni. Western Warbling Vireo. Seen occasionally, but more often heard singing in the tree tops along the river.

Helminthophila luciae. Lucy Warbler. One secured in a grove along the river May 19.

Dendroica æstiva. Yellow Warbler. Very numerous; nesting in every cottonwood grove and also in trees near the buildings. Their song was heard more often than any other.

Dendroica auduboni. Audubon Warbler. Numerous during May. Seen in the mountains in July.

Dendroica nigrescens. Black-throated Gray Warbler. Fairly common in the mountains among pines and oaks. Noticed old birds feeding grown young, several times during July. Two juveniles noted along river in August.

Seiurus noveboracensis notabilis. Grinnell Water Thrush. One secured among small cottonwoods on overflow land.

Geothlypis tolmiei. Tolmie Warbler. Numerous in May along the river. Seen in July in mountain meadows near summits of Chusca range.

Geothlypis trichas occidentalis. Western Yellow-throat. Common all thru May. Not seen afterwards.

Icteria virens longicauda. Long-tailed Chat. Several pairs spent the season in thickets along the river and their song was a prominent feature among all sounds.

Wilsonia pusilla pileolata. Pileolated Warbler. Seen frequently thru month of May.

Setophaga ruticilla. American Redstart. A pair seen during a shower, May 27.

Anthus pensilvanicus. Pipit. Seen in fields during spring migration.

Oroscoptes montanus. Sage Thrasher. Three seen in a patch of *Sarcobatus* around a sulphur spring out on the plains. An old nest seen.

Mimus polyglottos leucopterus. Western Mocking-bird. Numerous in fields and groves near the river. Nests seen in *Sarcobatus* and other shrubs. Their singing sounded like that heard in California but seemed less frequent.

Galeoscoptes carolinensis. Catbird. One came to the school grounds May 7 and stayed around a week or more. Another seen the same week in a willow thicket near the river.

Salpinctes obsoletus. Rock Wren. Found everywhere; a welcome sight in a desert land.

Thryomanes bewickii leucogaster. Baird Wren. Noted during February and March. In July seen in the mountains.

Troglodytes aedon parkmani. Parkman Wren. Several found among the pines.

Certhia familiaris montana. Rocky Mountain Creeper. Found among spruce trees near the top of the Chusca mountains. A family of grown young ones noticed in July.

Sitta carolinensis aculeata. Slender-billed Nuthatch. Numerous in the mountains in July. One noticed in the school grounds July 29.

Sitta canadensis. Red-breasted Nuthatch. One seen in a cottonwood tree near the river May 11.

Sitta pygmæa. Pigmy Nuthatch. Numerous from edge of pinyons to the upper limit of the pines.

Parus inornatus griseus. Gray Titmouse. Very numerous all thru the pinyon and juniper zone, and extending a little way into the pines. Families of grown young noticed several times, and these were extremely tame.

Parus gambeli. Mountain Chickadee. Common in the mountains. A few seen along the river in early spring.

Psaltiriparus plumbeus. Lead-colored Bushtit. Two seen along the river in February. Numerous among the pinyons and junipers, large family flocks being frequently encountered. Very tame.

Regulus calendula. Ruby crowned Kinglet. Common in spring migration.

Polioptila cærulea obscura. Western Gnatcatcher. Several pairs noticed. A nest found in a narrow-leaved cottonwood June 16, containing two gnatcatcher's and one cowbird's egg. July 28 a nest containing young nearly grown.

Myadestes townsendi. Townsend Solitaire. Several pairs noticed high in the mountains in July.

Hylocichla guttata auduboni. Audubon Hermit Thrush. High in the mountains in July; apparently breeding, as several pairs were seen. One pair displayed much uneasiness when a spruce thicket was approached, tho no nest could be discovered. Probably a nestling concealed somewhere.

Hylocichla guttata nana. Dwarf Hermit Thrush. One secured May 12 at Shiprock.

Merula migratoria propinqua. Western Robin. One seen March 10. Several

juveniles seen in the mountains in July, and four of the same noticed along the river July 28.

Sialia mexicana bairdi. Chestnut-backed Bluebird. A few seen in March along the river. Several noticed in the mountains. The location seemed favorable but their scarcity was quite noticeable.

Sialia arctica. Mountain Bluebird. Six seen one day in July among the pinyons. Possibly a family. Their absence from the higher part of the mountains seemed strange.

Sacaton, Arizona.

AN ANNOTATED LIST OF THE BIRDS OF MESA COUNTY, COLORADO

By ROBERT B. ROCKWELL

WITH TWO MAPS AND NINE PHOTOS BY THE AUTHOR

IN undertaking the compilation of an annotated list of the birds of Mesa County, Colorado, it has been the purpose of the writer to collect such information as might be available relating to this subject, with a view to preserving these pioneer observations and thus furnishing a skeleton around which future observers may build a complete Ornithological structure.

In placing this list before the reader, the writer wishes to emphasize the fact that it is purely preliminary; the amount of work he has done in the County, tho comparatively small, forces upon him a full realization of the remarkably small amount of information existing, regarding the bird life of the County, and also of its great possibilities along Ornithological lines on account of its geographical position and varying topography.

The information contained herein has been secured by an extensive correspondence covering a period of about fifteen months during which time every probable source of information on the subject which has come to the writer's knowledge has been investigated and the information thus secured embodied in this list. Added to this information are the observations of the writer covering two entire years and portions of the six intervening years between 1897 and 1905, about one-half of which time was spent within the confines of the County and during which time 109 species were encountered and a close study made of the commoner varieties.

In response to requests for information the writer has received generous and efficient assistance from the following persons and he wishes to take this opportunity to express to them his gratitude and appreciation of the valuable notes so willingly furnished.

To Prof. W. W. Cooke, U. S. Biological Survey, Washington, D. C., to whom the writer is indebted for a working model (Cooke's *Birds of Colorado* being followed as closely as possible both as to contents and to form), the entire list as completed was sent for correction and criticism. Prof. Cooke, after carefully examining the manuscript of the list, added nine new species and important notes on several already included in the list.

Mr. Richard H. Sullivan, Local Forecaster, U. S. Weather Bureau, Wichita, Kansas, formerly of Grand Junction, Colorado: An annotated list of 93 species, observed in that vicinity during about three year's residence, and containing among much other valuable information a very complete record of dates of arrival and de-

parture of species at Grand Junction, which have been used in this list in practically their entirety.

Miss Myra Eggleston, Ouray, Colorado, formerly of Grand Junction: An annotated list of 47 species observed by her in that vicinity, and complete notes on 19 species, that have been copied verbatim in the absence of any other information on those particular species.

Mr. Floyd Smalley, Collbran: Notes on 10 species observed by him in Plateau Valley, which had not been encountered by the writer.

Dr. M. V. Watson, Plateau City: Migration notes on 6 species of ducks observed by him in Plateau Valley.

Mr. E. R. Warren, Colorado Springs: An annotated list of 22 species observed in the vicinity of Grand Junction.

Mr. P. McCaffrey, DeBeque: Migration and nesting notes on the ducks at DeBeque.

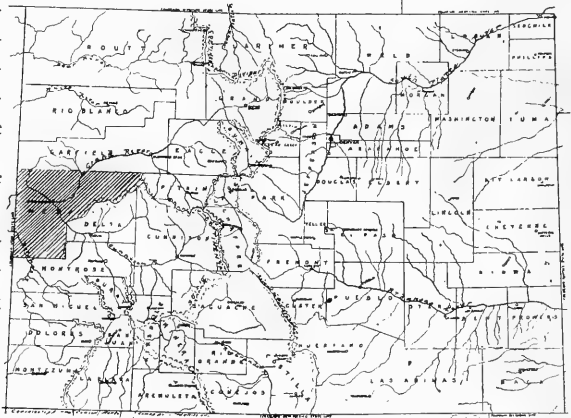
State Historical and Natural History Society, Denver: Notes on 3 species collected by Messrs. Will C. Ferrill and H. G. Smith at Grand Junction.

Without the above information much of the relative completeness of this list would be lacking, as nearly all of it covered information not contained in the writer's notes.

Notwithstanding the information collected from various parts of the County there yet remains a large number of species whose established range undoubtedly includes Mesa County, and whose absence from this list can only be accounted for by the small amount of information available regarding Mesa County Ornithology.

Beside the many species which without doubt occur regularly in the County there are also a number of western species whose extreme eastern limit may extend to western Colorado, and if this is the case, the valley of the Grand River forms a natural highway into Mesa County from the west which is probably the route traveled by these western species.

Prof. Cooke in his *Birds of Colorado* says, "The whole of north-western Colorado remains unexplored. What a field for the Ornithologist! As large as the whole of New England outside of Maine, and containing the whole valley of the Grand River and its tributaries, it will reward the zealous seeker with many Pacific forms not now known to Colorado. No other part of the State will probably show so large a return as the region around Grand Junction." It is unfortunate that this list does not bear out Prof. Cooke's last statement more fully, as only a few rare western



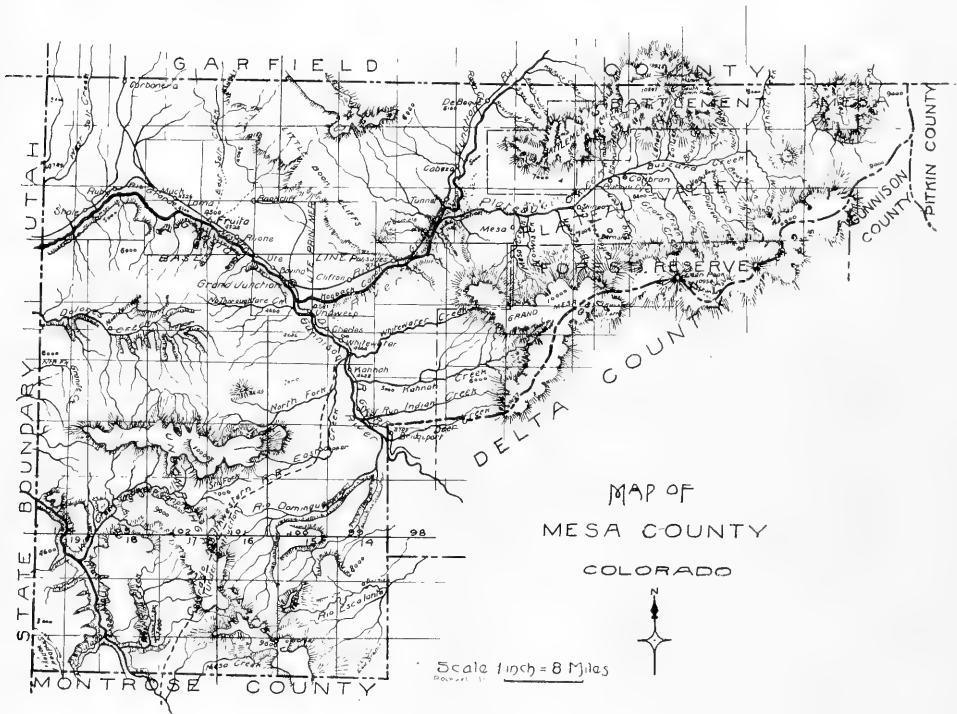
MAP OF COLORADO SHOWING POSITION OF MESA COUNTY

forms are included in it (and nearly all of these were furnished by Prof. Cooke), but the fact that it does not bear him out in no way detracts from the force of his statement, as most of the observations from that section are of a very general nature and practically no close study or collecting has been done in that locality, and it is perfectly safe to predict that careful study of this section will be productive of many rare and unique discoveries.

TOPOGRAPHY OF MESA COUNTY

Mesa County is situated on the extreme western edge of Colorado, adjoining Utah, and about midway between the northern and southern boundaries of the State. It has an area of about 3300 square miles, or as large as Delaware and Rhode Island combined.

The altitude of the County varies greatly. Probably the lowest point in the County is the Grand River where it crosses the state line at 4358 feet above sea level, while the highest points are Leon Peak, 10,954 feet on the southeastern boundary and South Mamm Peak 10,897 feet on the northern boundary, thus establishing a vertical range of something over 6,500 feet. The greater portion of the County is composed largely of broad, flat plateaus ranging in altitude from 5,000 to 7,000 feet, and high rolling mesas from 8,000 to 10,000 feet, altho at several points barren and extremely rugged mountains are encountered.



Three large rivers drain the County: the Grand which flows southwesterly thru the northern part of the County, the Gunnison which flows northwesterly and joins the Grand at Grand Junction, near the center of the County, and the Dolores which, flowing northwesterly toward the Grand River in Utah, cuts a small triangle from the southwest corner of the County. These streams, while all having their sources outside of the County, are considerably augmented by a few principal tributaries, chief among which is Plateau Creek which drains the eastern portion of the County and which is fed by 21 smaller streams. Thruout the western part of the County where there is very little timber to conserve the snow-fall, many of the tributaries are roaring torrents in the spring, but dry up entirely during the summer.

The western and southern portion of the County, which is by far the larger

territory, is largely a rough, broken, arid country consisting of sandstone ledges and canyons, cedar and pinyon covered hills, adobe buttes, and sage-brush and greasewood covered flats, and thru this greater part of the County practically no ornithological work has been done. This general type of topography is prevalent thruout the County, with the exception of the narrow eastern part, and the valleys of the Grand, Gunnison and Dolores Rivers.

The eastern end of the County is a remarkably well-watered and timbered section, and includes a portion of the Grand Mesa which in many places attains an altitude of 10,500 feet. This mesa is rolling and smooth in outline and is covered with a luxuriant growth of spruce, pine and balsam of several varieties, quaking-aspen, scrub-oak and service berry, interspersed with a great variety of shrubs, flowering plants and grasses. Along the numerous creeks which drain this section mountain birch, cottonwood and willows grow in profusion. There is probably no



BALLANTINE AND ROCKWELL RANCH, HEAD OF PLATEAU VALLEY, MESA COUNTY,
WHERE MUCH OF THE INFORMATION IN THIS LIST WAS COMPILED

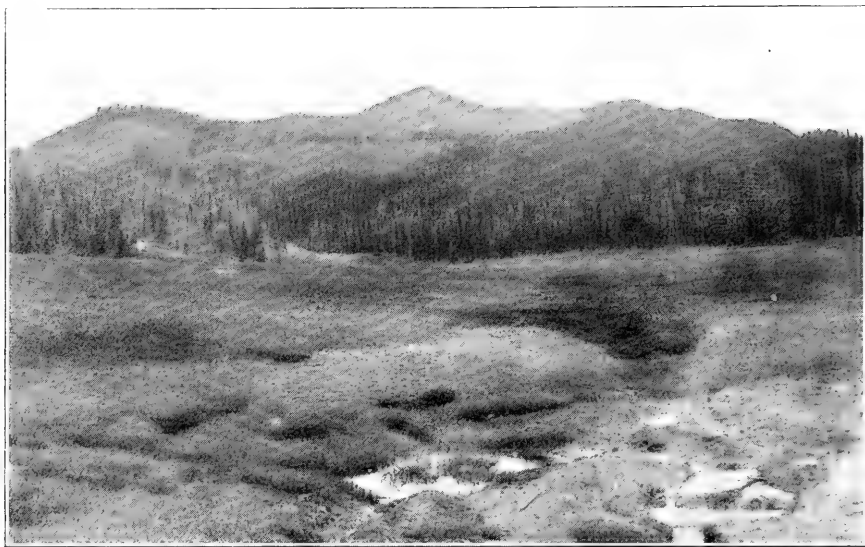
place in the Rocky Mountains which affords such a variety of food and cover, and to this fact, coupled with a remarkable abundance of insect life, may be attributed the abundance and variety of bird life occurring there.

The cultivated areas of the County are closely confined to the courses of the streams, with the exception of Plateau Valley where the smaller streams flowing into Plateau Creek at right angles, afford abundant water supply for a territory ranging in width from 10 to 20 miles and about 35 miles long. Nearly all of this land that is irrigable is under cultivation, and a vast amount of hay and grain is produced, while along the Grand and Gunnison river is located one of the greatest fruit raising districts in the west.

Practically all of the observations contained in this list come from the eastern, northern and central portions of the County thus practically ignoring the great

tract lying south of the Grand River and west of the Gunnison, and as the Dolores forms a natural highway for southern forms to wander into the County, it is not unreasonable to suppose that a number of species occur with more or less regularity in the southern end of the County, which have not yet been observed or recorded.

Partly on this account and partly on account of the unavoidable incompleteness of this list, the writer has included in the body of the list, but in brackets and smaller type, those species whose established range undoubtedly includes Mesa County, and whose seasonal movements make their occurrence within the county boundaries a practical certainty at some time of the year. The authority for including these hypothetical species in the list is derived from the ranges given in Prof. W. W. Cooke's *Birds of Colorado*, and the list of these species has been further passed upon by him, with particular reference to Mesa County. This feature of the list has been included simply as a guide in field work and as an aid



LEON PEAK, THE HIGHEST POINT IN MESA COUNTY, 10,954 FEET ALTITUDE

to intelligent efforts in clearing up the many points of uncertainty regarding Mesa County Ornithology.

The entire list as it stands includes 203 species, 159 of which have been definitely recorded for Mesa County, while the remaining 44 species altho not having been found within the County boundaries up to the present time, will probably be reported from there in the future.

ANNOTATED LIST

[*Æchmophorus occidentalis*. Western Grebe. This western species is an abundant summer resident in Utah and has been seen in South Park by Carter, so probably occurs regularly in Mesa County during migration, tho never in any abundance.]

Colymbus nigricollis californicus. American Eared Grebe. Summer resident, not common. This species is undoubtedly a regular migrant, but the writer has only seen it once. Mr. Floyd Smalley reports it as a regular summer resident at a small reservoir in Plateau Valley at about 6500.

[**Gavia immer.** Loon. A bird of general distribution thruout the State. Probably a regular tho uncommon migrant.]

Larus delawarensis. Ring-billed Gull. Migrant. This bird is probably one of the species that occur with more or less regularity during migration, but are never common. Miss Eggleston reports it as a rare migrant and Mr. Sullivan has seen it several times during July and August of 1903 and 1904 at Grand Junction. The writer has never seen it in the higher portions of the County and can learn of no records of it except along the Grand River.

[**Hydrochelidon nigra surinamensis.** Black Tern. Occasionally met with thruout the State in suitable localities, and undoubtedly occurs in more or less abundance during migration. A very few may possibly summer in Mesa County as they do in Routt County.]

Pelecanus erythrorhynchos. American White Pelican. Migrant. Whatever has been said regarding the occurrence of the Ring-billed Gull will apply equally well to this species. The only record however for the County is of a flock of eight seen by Mr. Sullivan, September 4, 1904 at Grand Junction.

[**Mergus americanus.** American Merganser. A bird of wide distribution, individuals of which undoubtedly find their way into the County from time to time during migration.]

[**Mergus serrator.** Red-breasted Merganser. Prof. Cooke says, "Undoubtedly occurs, tho not yet reported on the lower waters of western Colorado." Carter found them breeding on the Blue River not more than 75 miles northeast of Mesa County.]

[**Lophodytes cucullatus.** Hooded Merganser. Whatever has been said regarding the American Merganser will apply equally well to this species.]

Anas boschas. Mallard. Common in migration; breeds sparingly. This is probably the commonest duck occurring in the County. Owing to lack of suitable localities it is not a common breeder; but the writer has found young birds regularly on the head of Beaver Creek at about 9,000 feet.

Mr. P. McCaffrey mentions it as a regular breeder along the Grand River and Dr. W. V. Watson reports that they breed rarely in the Plateau Valley at about 6,000 feet, and a few remain all winter in the warm springs below Plateau City. In speaking of the migration of Mallard, Cinnamon Teal and Pintail he says: "The flight begins in spring early in March and continues 3 to 5 weeks. The autumnal flight begins in September (about the 20th) and lasts until November 1st."

Mr. R. H. Sullivan has seen them migrating as early as February 3, 1904, and as late as November 4, 1904, at Grand Junction. He says, "I would say that the main spring migration is in full swing between March 5 and 20, and the fall flight between October 15 and November 1.

Chaulelasmus streperus. Gadwall. Migrant. Mr. Sullivan says of this bird: "I saw a flock of 11 rise from the Gunnison River, March 28, 1904. The only time I have seen this duck." This would seem to indicate that the Gadwall is not a common migrant.

Mareca americana. Baldpate. Migrant. Mr. Sullivan reports them as more or less plentiful during the fall migration and he has also seen them occasionally during the spring at Grand Junction.

Nettion carolinensis. Green-winged Teal. Common in migration. Probably next in abundance to the Mallard during the fall and spring migrations, but have found no evidence of its breeding, altho Carter found it nesting in Middle Park. Mr. Sullivan has seen them both in spring and fall migration and classes them as "migrant, rather common in small flocks." It is also mentioned as a migrant at Grand Junction by Miss Eggleston.

Querquedula discors. Blue-winged Teal. Migrant. Miss Eggleston reports it as "Migrant: found in the marshes with the Green-winged Teal each spring and fall." Mr. Floyd Smalley gives it as occurring regularly in migration on the Grand Mesa.

Querquedula cyanoptera. Cinnamon Teal. Migrant. Altho this should be one of the commonest ducks of the County the writer has only two records, both from the Plateau Valley. Mr. Smalley reports seeing them several times on a small reservoir at the head of the Valley at about 6,500 feet and Dr. Watson says they occur regularly along Plateau Creek at about 6,000.

Spatula clypeata. Shoveller. Migrant. Both Mr. Smalley and Dr. Watson report this bird from Plateau Valley but I have no records of it occurring in the lower portions of the County altho it undoubtedly is not uncommon there during spring and fall.

Dafila acuta. Pintail. Migrant. Mr. Sullivan classes the Pintail as a rather common migrant. He says, "I have seen flocks of Pintails as early as February 27 (1904). On March 6, 1903, after the great cold spell of January and February I saw four flocks averaging 20 to 30 birds each. Have seen them returning November 4 (1904). Saw several flocks on October 18, 1904." Dr. Watson reports it as a regular migrant in Plateau Valley from 6,000 to 6,500 feet.

Marila americana. Redhead. Migrant. Mr. Sullivan has seen them both in spring and fall migration: in the fall from September 28 to October 22, and in the spring on February 27 and March 6. Mr. Smalley reports a good many taken on the lakes on the Grand Mesa during the fall and Dr. W. V. Watson gives it as a regular migrant in Plateau Valley.

Marila vallisneria. Canvasback. Migrant. Mr. Sullivan reports a flock of about 60 birds seen on the Grand River near Grand Junction February 20, 1904, and Mr. Smalley says they are occasionally taken on the lakes on the Grand Mesa. They probably occur regularly in migration tho not in any abundance.

[**Marila marila.** American Scaup Duck. Prof. Cooke says, "Occurs on both sides of the range but never common anywhere."]

[**Marila affinis.** Lesser Scaup Duck. Probably occurs regularly tho rather rarely during migration.]

[**Clangula islandica.** Barrow Golden-eye. Carter found this duck breeding at Breckenridge where it was a summer resident. Probably occurs regularly but rarely in Mesa County during the summer, and more commonly during migration.]

[**Charitonetta albeola.** Buffle-head. Occurs thruout the State in migration. Probably occurs in some abundance during certain periods of the spring migration.]

[**Histrionicus histrionicus.** Harlequin Duck. Cooke records this bird as a breeder in western Colorado at the higher altitudes. Probably occurs rarely both as a breeder and during migration.]

[**Erismatura jamaicensis.** Ruddy Duck. The Ruddy undoubtedly occurs during migration as commonly as the other species of ducks and its absence from this list can only be accounted for by the small amount of information available. It is not improbable to expect that it will yet be found breeding within the County.]

Chen hyperborea. Lesser Snow Goose. Migrant. Mr. Sullivan reports two flocks of migrants at Grand Junction, one March 4, 1904, and one October 20, 1904. They probably occur more or less regularly in migration.

Branta canadensis. Canada Goose. Migrant. Mr. Sullivan reports seeing two large flocks pass over Grand Junction March 18, 1904, but has never seen them in the fall. Mr. Peter Lefever and Mr. John Fitzpatrick have both seen it occasionally in migration in Plateau Valley, but have not noted it in late years.

[**Branta canadensis hutchinsii.** Hutchins Goose. This species tho undoubtedly occurring regularly within the County is in all probability confused with the typical form by hunters. It is probably somewhat rarer than the Canada Goose.]

Botaurus lentiginosus. American Bittern. Mr. Sullivan classes this bird as scarce and says, "I saw two pairs along the slough south of Grand Junction during the summers of 1903 and 1904. Do not know that they breed."

Ardea herodias. Great Blue Heron. Summer resident; not uncommon, in mi-

gration common. The writer has seen it frequently in spring and fall thruout the County up to 9,000 feet, but has not found it breeding. Mr. Sullivan speaks of it as occurring along the Gunnison River and thinks they breed there. Mr. E. R. Warren and Miss Eggleston report it as a common summer resident at Grand Junction.

Nycticorax nycticorax naevius. Black-crowned Night Heron. Mr. R. H. Sullivan says, "I saw a single individual in the slough south of the Sugar Factory (Grand Junction) at 8 p. m. August 22, 1904. The only one I have seen here." This is the only definite record for this species but it is not unreasonable to suppose that it occurs with more or less regularity during migration.

Grus mexicana. Sandhill Crane. Summer resident, not uncommon locally. Several pairs of these birds have nested regularly in the high mountain parks at the head of the Muddy, and they are reported frequently from various points on the Grand Mesa. The usual altitude selected for their breeding grounds is from 9,000 to 9,500.

[**Rallus virginianus.** Virginia Rail. **Porzana carolina.** Sora. These two species, while of very wide distribution, are usually found in low altitudes. Probably both species occur in the Grand Valley during migration, and a few may summer there.]

Fulica americana. American Coot. One was killed during the summer of 1904 by Mr. Floyd Smalley on a small reservoir in Plateau Valley at about 6500 feet. It is probably an occasional summer resident in suitable localities, and a regular migrant, but information regarding its abundance is lacking.

[**Phalaropus lobatus.** Northern Phalarope. **Steganopus tricolor.** Wilson Phalarope. Both of the above species undoubtedly occur regularly as migrants.]

[**Recurvirostra americana.** American Avocet. Occurs commonly in the San Luis Valley and abundantly in Utah so it is reasonable to suppose that it is of regular occurrence in Mesa County during migration, tho probably never common.]

Himantopus mexicanus. Black-necked Stilt. Miss Eggleston classes this bird as "irregular migrant" and says, "For a few days during the season of migration this bird may be seen wading in the shallow water of the Rio Colorado in company with the sandpipers. They are more often seen early in the evening when the insects are numerous over the water. They are rarely seen in flocks, often only one being noted in a season."

Gallinago delicata. Wilson Snipe. Information is lacking on this bird. The writer has taken it four times, once in February, 1902, and three times during the winter of 1904-5 in Plateau Valley at an altitude of 6500. There is comparatively little suitable ground for it in the County and I think its occurrence must be classed as migrant, rather uncommon.

Actodromas maculata. Pectoral Sandpiper. Miss Eggleston classes them as "irregular migrants" and says they are occasionally seen with the other sandpipers for a few days during high water, wading along the edges of the Rio Colorado.

Actodromas bairdii. Baird Sandpiper. Miss Eggleston writes, "Regular migrant, being seen both in the spring and fall. They come in small numbers, remaining a few days, apparently feeding upon the helgramites."

Actodromas minutilla. Least Sandpiper. Regular migrant. Speaking of this bird Miss Eggleston says, "This is the commonest of the sandpipers in the lower valley. They are seen in small flocks for a few days each spring and fall. They remain longer than the other wading birds except the heron."

Totanus melanoleucus. Greater Yellow-legs. **Totanus flavipes.** Lesser Yellow-legs. Not uncommon in migration in suitable localities. The writer has seen both species on the reservoirs on the Grand Mesa up to 10,000 feet, and also in

Plateau Valley at 6500 feet. The two species occur in about equal abundance wherever found.

Helodromas solitarius cinnamomeus. Solitary Sandpiper. The only information at hand regarding this species is from Prof. Cooke who says: "Several seen June 22, 1893, by J. A. Loring on the Grand River near Grand Junction." They probably occur regularly in migration.

[**Symphemia semipalmata inornata.** Western Willet. Undoubtedly a regular migrant and probably a few summer within the boundaries of the County.]

Bartramia longicauda. Bartramian Sandpiper. Accidental. A lone bird of this species was seen by the writer on a small dry sage-brush flat at the head of Plateau Valley on the slope of the Grand Mesa at about 6800 feet. The bird which was quite tame, was flushed repeatedly and there can be no doubt as to the identity. The surrounding altitude and locality make this the strangest record the writer has ever encountered.

Actitis macularia. Spotted Sandpiper. Summer resident, common. This sandpiper, which is the most common wader with the possible exception of the Killdeer, is found on all the reservoirs and along all the streams thruout the spring, summer and fall. It is apparently as common at 10,000 feet as at 5000 during the breeding season and is much more common during migration thruout the County. Mr. Sullivan gives the extremes of migration dates as March 18 and October 7.

Numenius longirostris. Long-billed Curlew. Mr. Floyd Smalley reports killing one of these birds on a small reservoir at the head of Plateau Valley at an altitude of about 6500, during the spring of 1905. This is the only information I have regarding the occurrence of this bird in the County. It is probably a regular migrant, tho never occurring in any abundance.

Oxyechus vociferus. Killdeer. Summer resident, abundant. The commonest wader found in the County. Arrives about April 1, or possibly a little earlier in the lower parts of the County, breeds early in June and stays until late in October. Nests commonly up to at least 6500. My earliest arrival date is March 20, 1902.

[**Podasocys montanus.** Mountain Plover. Cooke mentions this species as occurring in the mountain parks during the summer, and Carter found it nesting in Middle Park. Probably occurs rarely in Mesa County in the summer and more commonly during migration.]

Colinus virginianus. Bob-white. The only information I have relative to the occurrence of this bird I quote from Cooke's *Birds of Colorado*, Second Appendix, (March, 1898): "Introduced about 1891 near Grand Junction and still occurs, but not in anywhere near the numbers of the California Partridge."

Lophortyx californicus. California Partridge. Resident. Abundant locally. Speaking of this species Miss Eggleston says, "A few years ago these birds were introduced near Grand Junction and have multiplied rapidly. They make their nests under the piles of pruned branches from the orchards and bring out large broods. One hen has been seen with twenty-three chicks, of two distinct broods. They are very tame, sitting on the fence posts or trees by the roadside and calling noisily to one another. They feed early in the morning and large numbers of them can be driven from the gardens."

Mr. Sullivan says of them: "Plentiful; so plentiful as to become a nuisance; farmers are complaining. They do not fly in flocks like the Bob-white, but will scatter thru the brush in all directions as soon as flushed. It is seldom that more than two or three fly away together. They seem to be at home in the trees, too." They are common at least as far up the Grand River as DeBeque.

Dendragapus obscurus. Dusky Grouse. Resident. Common in suitable localities. Breeds from 7,000 to 10,000 feet, during June. The young are usually on the wing in August. During September and October these birds are in flocks, but the rest of the year they are found mostly in pairs or singly. They show very little fear and are an easy prey to marksmen. Their favorite haunts are open quaking asp hillsides or the small glades or parks in the heavy spruce timber.

[**Podiceps phasianellus campestris.** Prairie Sharp-tailed Grouse. This bird was formerly not uncommon thruout northwestern Colorado and is still found in considerable numbers in certain parts of Routt County, being strictly resident wherever found. It is not improbable that a few scattered flocks may be found in the Grand Mesa section of Mesa County.]

Centrocercus urophasianus. Sage Grouse. Resident. Not uncommon. Lack of extensive sage brush country accounts for the apparent scarcity of this bird. I have seen it in March, 10 miles south of DeBeque, in summer in Plateau Valley and in July with young at the foot of Mamm's Peak. It usually breeds in May at from 5,000 to 8,000 feet and the only migration if any is a slight vertical one. Miss Eggleston mentions it as a summer resident around Grand Junction.

[**Columba fasciata.** Band-tailed Pigeon. Prof. Cooke states that this bird is quite common and nests near Glenwood Springs. The writer has never seen the bird in this section and it is probably of uncommon occurrence in Mesa County.]

Zenaidura macroura. Mourning Dove. Summer resident, abundant. One of the commonest summer birds, nesting abundantly up to at least 7,000 feet. At this altitude it arrives the latter part of April, nests in May, June, and July and the bulk leave early in September. Mr. Sullivan has seen it as early as February 26 (1905) and as late as November 2, at Grand Junction. He says "Nesting begins during the latter part of March and continues with little regularity until the late summer. Mr. S. M. Bradbury says a dove was seen on a nest with eggs September 1, 1903. They are very plentiful in large flocks between the middle of August and the middle of September." Mr. E. R. Warren reports it from Grand Junction October 4. Raises at least two broods a season and occasionally three.

Cathartes aura. Turkey Vulture. Summer resident, common. I know of no place in the State where the Turkey Vulture or Buzzard as it is commonly known is more abundant than in Mesa County. On Plateau Creek about 4 miles above Collbran there is a "Buzzard Roost" in a grove of large trees, where I have seen as high as 50 of these birds at one time as night approached. The birds undoubtedly breed but I have never found nest or young. My earliest arrival date is April 3, 1902, and the bulk are here by April 15. I have seen the birds as high as 10,000 feet but do not think they breed that high. Mr. Sullivan says the birds are never very plentiful in the lower valley. His extreme dates of migrations are March 18 and September 27.

Circus hudsonius. Marsh Hawk. Summer resident, not uncommon. I have every reason to believe that this hawk breeds within the County, as I have seen it from April to November at frequent intervals, but have never found it nesting. Mr. E. R. Warren reports it from Grand Junction about October 1st, and it may occur in the County in winter but I have no records to that effect.

Accipiter velox. Sharp-shinned Hawk. Summer resident, common and breeds. This species is fully as common here as in other portions of the State and altho I have only one record of its nesting in the County, I think it may be considered as a common breeder. The nest in question was found early in June, 1897. It was built in a cedar and contained three fresh eggs. This set is now in the possession of Prof. A. H. Felger. I have never seen this bird in the winter altho it is probably a not uncommon winter resident. Miss Eggleston and Mr. Sullivan both mention it as a common migrant at Grand Junction.

Accipiter cooperi. Cooper Hawk. Abundance doubtful. My only record of this bird is of one seen March 20, 1902, three miles south of Collbran, but judging from notes from adjoining sections I am inclined to think it is not of uncommon occurrence. I have frequently seen a hawk at a distance which I took to be this species, but the above is the only definite record.

[**Accipiter atricapillus.** American Goshawk. Generally distributed thruout the State during winter and not uncommon in the mountains during the summer. Probably occurs in the County at all times of the year but never commonly.]

Buteo borealis calurus. Western Red-tail. Summer resident, common; winter resident, not common. By far the most abundant big hawk in the summer, arriving late in March and breeding early in May. Breeds commonly from 6,000 to 9,000 feet and in the Buzzard Creek country (8,000 to 9,000) builds in scrub oaks from 8 to 15 feet above the ground, and also in the sandstone ledges. In the valleys it nests commonly along the creeks, selecting tall cottonwoods or spruces and building at from 30 to 60 feet above ground. Incubated eggs have been taken as early as May 7th at 8,000 feet. I have included it as a winter resident upon the strength of having seen it February 8 and March 12, 1902, sometime before the bird movement starts. Mr. Sullivan has seen it only as a migrant at Grand Junction.

Buteo swainsoni. Swainson Hawk. Summer resident, common. With the exception of the Western Red-tail this is the commonest big hawk found in the County. It arrives with the Red-tail and breeds early in May. Probably a very few remain thruout the winter in the lower parts of the County. Mr. Sullivan states that this is probably the commonest of the larger hawks and buzzards around Grand Junction and they probably breed, but he has never seen them during December and January.

[**Archibuteo ferrugineus.** Ferruginous Rough-leg. Probably a rather common resident, omitted from the list thru being confused with the other large hawks in the absence of specimens in the hand.]

Aquila chrysaetos. Golden Eagle. Resident, common. The rocky portion of the County furnishes ideal homes for this great bird and they occur in all suitable localities. They are much more in evidence during the winter than in summer, owing to the fact that they nest very early (March and April) and then wander up to high altitudes for the summer, returning to the valleys when the food supply on the Mesa is cut off by snow. During the winter they live largely on carrion, but so far as my observations go are not depredatory. I have not found them nesting but have seen the birds almost every day during March and April. Mr. Sullivan reports two pairs nesting near Grand Junction in 1903 and 1904, one pair on the cliffs of the Grand Mesa and one on the cliffs of Pinon Mesa about 10 miles south of the city.

Haliaeetus leucocephalus. Bald Eagle. Mr. Sullivan considers the Bald Eagle more or less common on the Grand River. He says: "In the summer of 1904, I saw more Bald Eagles than Golden. On July 11, 1904, I counted 9 soaring about 300 to 500 feet up, just east of the city. Returning home from the east during February, 1904, I counted 7 Bald Eagles along the Grand River either in the cottonwoods or flying along about 75 feet up, below DeBeque. It was not at all uncommon for us to see two or three of these birds going northward almost daily between March and August, 1904. I cannot say that they breed in the circumscribed area to which my observations were mostly confined, but at any rate I never saw so many eagles in the locality (both kinds) as I saw during the summer of 1904, and reports from the higher elevations should show that both kinds breed." Mr. Floyd Smalley reports two birds of this species from the head of Plateau Valley at about 6,500 feet. One was a summer record and the other a fall record.

[**Falco mexicanus.** Prairie Falcon. Cooke says, "In some of the more open portions of western Colorado it is quite numerous." Carter found it breeding in Middle Park. Probably is a not uncommon resident locally.]

[**Falco peregrinus anatum.** Duck Hawk. Cooke reports it as breeding up to 10,000 feet, and it has been found breeding in different parts of western Colorado. Probably occurs regularly as a resident but never commonly.]

Falco columbarius. Pigeon Hawk. The only record of this species at hand is one seen by the writer December 23, 1901, on Plateau Creek at about 6,000 feet. It probably occurs regularly but rather rarely.

[**Falco richardsoni.** Richardson Merlin. Probably occurs occasionally in migration.]

Falco sparverius phalæna. Desert Sparrow Hawk. Summer resident, abundant. By far the most abundant raptorial bird found in the County. Arrives the first of April and breeds during the whole of May and June up to at least 8,500 feet. As soon as the young are able to fly they congregate in small flocks and frequent the fields feeding chiefly on mice and grasshoppers. By November first all have left for the south. The choice of a nesting site varies greatly. I have found them breeding in cedar stumps within four feet of the ground, in cavities in sandstone ledges and one pair nested in the roof of a small schoolhouse.

Pandion haliaetus carolinensis. American Osprey. Irregular migrant. Miss Eggleston says of this bird, "Occasionally seen perched along the high banks of the Rio Colorado watching for fish. It is a solitary bird only one being seen at a time."

Asio wilsonianus. American Long-eared Owl. Resident, not uncommon. This bird is occasionally met with along the creek bottoms and in dense willow thickets around springs, but on account of its retiring habits is little known. Nests about the middle of April, usually in willow thickets. Feeds largely upon small birds and mammals.

Asio accipitrinus. Short-eared Owl. The only record at hand for this species is of one seen by the writer during the winter of 1904-05 in Plateau Valley, at about 6,500, during a spell of unusually cold weather. It was hunting around the stock-yards, evidently looking for mice. It is probably of very uncommon occurrence.

[**Cryptoglaux acadica.** Saw-whet Owl. Cooke says of this species that it occurs thruout the State below 8000 feet. Probably occurs rarely in Mesa County.]

Bubo virginianus pallescens. Western Horned Owl. Resident, not uncommon. Altho I have not found it nesting there can be no doubt but what this bird breeds in the County as I have seen it all thru the winter and in June 1897 I saw an adult bird and two young of the year. I have no positive information as to whether the Mesa County bird is referable to *arcticus* or to *pallescens* but am led to believe it is the latter.

Speotyto cunicularia hypogæa. Burrowing Owl. Miss Eggleston says this



SPARROW HAWK

bird is a common resident around Grand Junction, "being found frequently sitting at the mouth of an abandoned prairie-dog hole, blinking in the bright sunshine. Some seasons they seem to be much more common than others."

[**Glaucidium gnoma**. Pygmy Owl. Has been reported as common in south-western Colorado, and occurring in Routt County, while Carter found it breeding in Middle Park. There can therefore be little doubt of its being a not uncommon resident in suitable localities in Mesa County.]

Coccyzus americanus occidentalis. California Cuckoo. Miss Eggleston calls it "summer resident" and says "One pair nested for several seasons in an orchard near us. Each evening after sunset the plaintive notes could be heard for a quarter of a mile, but the birds were seldom seen."

Ceryle alcyon. Belted Kingfisher. Summer resident, common. Prof. W. W. Cooke in his *Birds of Colorado* gives this bird as "Resident", and Mr. Sullivan says that a few remain thruout the winter if they can find open water, but the writer has never seen them in the higher portions of the County except in summer. Mr. E. R. Warren reports it from Grand Junction as late as October 6. During the summer months it is common along all the streams up to at least 8500 feet and breeds with more or less regularity. Mr. Sullivan mentions it as breeding near Grand Junction.

Dryobates villosus monticola. Rocky Mountain Hairy Woodpecker. Resident, common in suitable localities. The writer has not collected sufficient information to make any definite statements regarding abundance, distribution, migrations, etc., further than the following from Mr. Sullivan who says it is "rather scarce, summer resident. Have seen it in mild winters, probably northern birds. Do not know that it breeds this low down, but have seen it feeding young."

Dryobates pubescens homorus. Batchelder Woodpecker. Resident, common. More abundant from 7000 up during the breeding season, and winters up to at least 9000 feet. Nests early in June. Mr. Sullivan considers this bird as rather scarce at Grand Junction but has seen it feeding young.

[**Picoides americanus dorsalis**. Alpine Three-toed Woodpecker. Prof. Cooke states that tho never common this bird is very generally distributed thruout the higher portions of the State. It therefore probably occurs regularly on Grand Mesa.]

Sphyrapicus varius nuchalis. Red-naped Sapsucker. Summer resident, common. Frequents the quaking-aspen groves in the gulches from 8000 to 9000 where the great bulk of the birds breed. I have no information as to its migratory movements relative to Mesa County. One was seen however April 22, 1902, 10 miles south of DeBeque at about 6000 feet which was evidently a migrant. Mr. Sullivan says they are seen only occasionally during the summer at Grand Junction.

Sphyrapicus thyroideus. Williamson Sapsucker. Quoting Miss Eggleston: "Regular migrant, being found quite frequently thru the orchards in the early spring. They are generally credited with killing the fruit trees, but examination reveals the fact that the trees frequented by the birds are killed by borers!" This species is undoubtedly a summer resident and breeder in suitable localities in the higher portions of the County but the writer has never had the good fortune to encounter it within the County boundaries.

Asyndesmus lewisi. Lewis Woodpecker. Summer resident, common. Frequently met with along the streams in the lower portions of the County. I have seldom seen it above 6500. Mr. E. R. Warren reports it from Grand Junction September 28. Nests along the creek or river bottoms, preferring large naked stumps. More common along the Grand River than higher up in the hills. I have never seen it in winter.

Calaptes cafer collaris. Red-shafted Flicker. Resident, abundant. One of

the most common birds found in the County. Found at all altitudes during the summer and breeding abundantly wherever found. Its choice of a nesting place is varied. I have found it in cottonwoods, cedars, scrub-oak, pine and aspen. Winters along the streams in the lower part of the County, but not so plentiful in winter as in summer. Its breeding habits are rather uncertain; fresh eggs may be found during all of May and June.

Phalænoptilus nuttalli. Poorwill. Summer resident, presumably common. Owing to its retiring habits and nocturnal proclivities I have very little information regarding this peculiar bird. One was collected for identification July 5, 1899, at about 6500 feet in the Plateau Valley, and I have seen several others up to 8000 feet, but have not found it nesting, altho it undoubtedly does breed in the County.

Chordeiles virginianus henryi. Western Nighthawk. Summer resident, common. A bird of the lower altitudes, much more common below 6500 feet than above, in fact it is rarely met with above 8000. Arrives rather late in the spring, seldom occurring in any abundance before May 1. Nests late in June, selecting dry rocky ridges or sage brush flats as a nesting site. Departs for the south with the first frosts. Mr. Sullivan's extreme dates of arrival and departure are May 8 and October 18. He says they are most abundant during the middle of August gradually diminishing after that date.

[**Cypseloides niger borealis.** Black Swift. Occurs regularly in Southwestern Colorado and probably wanders into Mesa County from the south.]

Aeronautes melanoleucus. White-throated Swift. Summer resident, of uncertain occurrence. The writer has occasionally seen large flocks of these birds, flying at a great height, pass over the Plateau Valley during the summer months, but their occurrence is very uncertain, and I do not think they breed in the eastern part of the County. My earliest arrival date is April 27, 1902. Mr. Sullivan says a large colony breeds in the "ragged faces of the cliffs near the Book Cliffs Coal Mine". Prof. Cooke states that they nest commonly at Whitewater.

Trochilus platycercus. Broad-tailed Hummingbird. Summer resident, abundant. The only hummer I have found in the County, altho *T. alexandri* and *S. rufus* undoubtedly occur with greater or less regularity. Arrives early in May (May 4, 1902, is my earliest arrival date), and breeds during June and July. Frequents the timber along the streams from 6000 feet up and raises two broods in a season and possibly three. I found them breeding abundantly on Buzzard Creek at about 8000 and found nests containing fresh eggs, freshly hatched young and fledglings just ready to leave the nest on the same day and within a radius of half a mile. The nests are placed in pines, cottonwoods, and alders from 6 to 30 feet from the ground and almost invariably near or over running water. One nest found was built on a root protruding from a bank directly over and within 2 feet of the swift running water of Buzzard Creek. I have noted it as late as October 15 but I think the bulk migrate in September.

Selasphorus rufus. Rufous Hummingbird. Quoting Miss Eggleston, "Irregular migrant. This hummer is not often seen, but occasionally will be met with for a few days when the early flowers are out."

[**Tyrannus tyrannus.** Kingbird. It is hard to understand why this well known bird has not been reported by some of the observers who have furnished the basis of this list, but the special inquiry about this species has been made the writer has been unable to find any record of its occurrence in the County. It breeds in Middle Park, is known to occur rarely in Routt County and probably occurs occasionally in the Grand Valley.]

Tyrannus verticalis. Arkansas Kingbird. Summer resident. I am not positive as to the relative abundance of this species and *T. vociferans*. Prof. Cooke in his *Birds of Colorado* says of *verticalis*, "Scarcely found in the mountains, rising

regularly only to 7000 feet. Breeding from there down to the plains." This would still leave a large part of the County within their breeding range. I am led to believe that both forms breed commonly as I have found Kingbirds nesting abundantly from 4800 to 8500, but have not felt justified in collecting a large enough series to determine definitely their relative abundance or range. Miss Eggleston writes: "Both *verticalis* and *vociferans* breed freely near Grand Junction tho *verticalis* is more abundant." Mr. Sullivan says, "Both kinds are very plentiful and extremely noisy generally about August 1. After that date they thin out very rapidly. Extreme dates of observation are April 11 and August 11.



ADULT ARKANSAS KINGBIRD ON NEST BUILT BETWEEN
DIAGONAL BRACES OF LARGE FARM GATE

Tyrannus vociferans. Cassin Kingbird. Summer resident, common. This species together with the preceding are among the most common breeders found in the County, and the dates of arrival, nesting, food habits, etc., of the two species are practically-identical. Arrives the first of May and breeds from May 15 to July 1, according to altitude, selecting various nesting sites. I have found nests in scrub-oak, cottonwoods, quaking-asps, and gate frames, on log fences, and on the top rail of a large farm gate. The birds are of a sociable disposition, nests being rarely found any great distance from human habitation. Prof. Cooke states that both species breed up to 8000 feet; I have found a Kingbird breeding commonly at 8000 feet and as *vociferans* is more typically a mountain bird I have attributed these records to this species.

Myiarchus cinerascens. Ash-throated Flycatcher. Writing of this western species Mr. Sullivan says: "Summer resi-

dent. Not common; rather scarce. Frequenter of thickets, brush and low woods. Have never been able to find their nests; am certain they breed, for I have seen their young in the brush, and the adults feeding them." Extreme dates he gives as May 2 and August 22. I have no other information regarding this species.

Sayornis saya. Say Pewee. Summer resident, abundant. A characteristic bird of the County. Every ranch has its pair (or possibly more) of Phoebe during the entire summer nesting in the barns, under sheds or in outbuildings. In the lower parts of the County it is an early arrival. Mr. Sullivan reports it from Grand

Junction as early as March 4 and nests as early as the last week in April, with young on the wing by June 1. In the higher parts of the County, however, the dates of arrival and nesting are considerably later. My earliest arrival date is March 21 and the earliest nest May 4, while the great bulk of the nests are two weeks later. Raises two broods in a season and the bulk depart in September, altho E. R. Warren has seen it at Grand Junction as late as October 4.

Nuttallornis borealis. Olive-sided Flycatcher. Information is lacking regarding the occurrence of this species within the confines of the County. It is included in this list on the strength of a single specimen seen during the summer of 1905 at 6800 in Plateau Valley. I do not think it is common anywhere in the County.

Contopus richardsoni. Western Wood Pewee. Summer resident. Common. One of the most common Flycatchers in the higher parts of the County. Frequents the quaking-aspen particularly from 7000 to 10,000 feet where its plaintive calls may be heard continually during the breeding season which is late in June. The writer has not seen it in any abundance below 7000 feet.

[**Empidonax difficilis.** Western Flycatcher. The absence of this bird from the list can only be accounted for by the lack of systematic collecting by field workers, as it is a common summer resident thruout the mountains of the State and undoubtedly occurs more or less commonly in Mesa County.]

Empidonax traillii. Traill Flycatcher. Prof. Cooke says, "One collected in June, 1893, at Grand Junction by J. A. Loring. The species was not rare and was breeding."

[**Empidonax hammondi.** Hammond Flycatcher. Whatever has been said regarding the Western Flycatcher will apply equally well to this species.]

Empidonax wrightii. Wright Flycatcher. Summer resident, common. Frequents the open hillsides covered with "buck brush" from 7000 to 9000 feet, where it nests commonly late in June. I have no information concerning its migratory habits.

Otocoris alpestris leucolæma. Desert Horned Lark. Summer resident, not common. Winter resident, abundant. Arrives in small scattered flocks with the first cold weather and in large numbers with the first snow. It remains abundant up to about April first when the birds begin to scatter and migrate and by the middle of April is seldom seen. I am of the opinion that most of the birds wintering here breed farther north and what few birds breed in the County come in from the south. Miss Eggleston reports it as "abundant both summer and winter" at



NEST OF THE SAY PHOEBE; MESA COUNTY

Grand Junction, but Mr. Sullivan writes that he has not seen it at the same point during the summer. Prof. Cooke states that they are "not rare at Grand Junction in summer." The writer has seen it only once during the summer and this was a lone specimen observed July 8, 1899, at 6500 feet in Plateau Valley.

***Pica pica hudsonica*.** American Magpie. Resident, abundant. Probably the most generally distributed bird occurring in the County. Is common everywhere and at all altitudes. Nests in April and May according to altitude and breeds abundantly from 4800 to 10000 feet. My earliest date for eggs is March 31 at 6500 feet. It is a source of great annoyance to the farmers and cattle men attacking open sores on the cattle, sometimes with serious results, and stealing large numbers of young chickens and eggs. It nests in all sorts of locations including cottonwoods, cedars, pinyons, willows, service-berry, box-elder and alder and at heights ranging from 6 to 60 feet, above ground. The birds are most common in the settled country during the winter but I have found them as high as 8000 feet in January and miles from a ranch, when the upper country was under three feet of snow. During the winter they live largely on dead animals, but it is during the spring and summer that their depredations are most conspicuous.

***Cyanocitta stelleri diademata*.** Long-crested Jay. Resident, common. Much more in evidence during the winter than summer, but I am inclined to think this is due to their seclusive habits during the breeding season rather than to a diminution of their numbers. Breeds during June in the spruce everywhere above 8500 feet and winters commonly up to at least 6500 feet. They do not leave their winter quarters for the spruce until late in April returning to the valleys late in October.

***Aphelocoma woodhousei*.** Woodhouse Jay. Resident, common. A bird frequenting lower altitudes than the preceding during the summer, but found everywhere in company with *C. s. diademata* during the winter. Frequents the open scrub-oak hillsides from 5500 to 7500 feet during the breeding season where it nests commonly during June, and evidently winters near the breeding grounds, altho it may perform a slight vertical migration. It is the commonest of the larger birds with the exception of the magpie around the ranches in winter feeding on grain in the barnyards and stables and becomes very tame.

***Perisoreus canadensis capitalis*.** Rocky Mountain Jay. Resident, common in suitable localities. Wherever an altitude of 10,000 feet or over is attained these birds are common both during winter and summer, but they are seldom seen below 9500 feet even in winter and are consequently rather inconspicuous. No information is at hand concerning their breeding habits in this County.

***Corvus corax sinuatus*.** American Raven. Resident, common. I am led to believe that Ravens perform practically no migration. They are equally plentiful in summer and winter and I have never noticed any migratory signs. They breed commonly during April from 5000 to 7000 feet, frequenting rocky unsettled localities and nesting in high sandstone cliffs. They are particularly numerous in all the box canyons emptying into the Grand Canyon. Mr. W. P. Ela states that they formerly nested commonly on the Little Dolores River but he has not known of their nesting there of late years. They are commonly found with the Turkey Vulture around carcasses and the two are evidently on the best of terms. A bird of solitary habits but occasionally seen in small flocks.

***Nucifraga columbiana*.** Clarke Nutcracker. My notes on this singular bird are very incomplete. I have seen them in March at 5000 feet and in June at 7000 feet in small flocks. Judging from these dates it is not improbable that they breed in the County and records from surrounding localities seem to support the sup-

position. They are probably winter as well as summer residents tho information of a definite nature to verify this is lacking.

Cyanocephalus cyanocephalus. Pinyon Jay. Resident, abundant. Frequents the barren cedar country from 5000 to 8000 feet in immense flocks during late summer, fall and winter and divides into small flocks to breed, late in March and in April. I have found young just able to fly as early as April 22. They are occasionally seen during summer and fall in the cultivated valleys but the great bulk of the birds are found among the dry cedar covered hills far removed from habitations, and are very seldom seen in well watered localities. Miss Eggleston says it is abundant around Grand Junction during the fall.

[**Dolichonyx oryzivorus.** Bobolink. This species probably occurs rarely within the County boundaries. Carter took it in Middle Park and South Park and Mr. E. R. Warren saw several in Routt County during the summer of 1907.]



NESTING SITE OF AMERICAN RAVEN (just above cross) ON SANDSTONE LEDGE; MESA COUNTY, 6800 FEET ALTITUDE

Molothrus ater. Cowbird. Summer resident, common. Thruout the cultivated portions of the County the Cowbird is common, but in the barren or sparsely settled parts it is rarely met with. Frequents pastures and feed-lots used by cattle and is at all times very tame and lifeless. Nests of the Yellow Warbler, Green-tailed and Spurred Towhees and Red-winged Blackbird are the favorite repositories for the eggs, which are deposited during June.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Summer resident, not uncommon. Miss Eggleston says, "These birds are seen in small numbers with the flocks of other Blackbirds and Cowbirds. They are numerous in the cat-tail swamps and scarcely notice passers by." Mr. Sullivan mentions a colony of 15 or 20 birds nesting in a slough near Grand Junction. In the higher portions of the County they are rarely seen and I have not found them nesting in Plateau Valley.

Agelaius phoeniceus. Red-winged Blackbird. Summer resident, abundant. One of the most abundant summer birds, arriving early in March, nesting in June up to at least 7000 feet and remaining until late in October. My earliest date at 6500 feet is February 20. Mr. Sullivan states that he saw flocks of these birds occasionally during the winters of 1903-4 and 1904-5 at Grand Junction.

Sturnella neglecta. Western Meadowlark. Summer resident, abundant. One of the earliest arrivals in spring, appearing about March 15 and by the first of April is abundant. Breeds thruout its range up to at least 7500 feet during May, June and July and raises two broods in the lower altitudes. Essentially a bird of the farming regions and seldom seen in unsettled localities. The great bulk leave the County in October but Mr. Sullivan saw the bird occasionally during the winters of 1903-4 and 1904-5 and says a few remain thruout nearly every winter.

Icterus bullocki. Bullock Oriole. Summer resident, abundant. Altho a late arrival in the spring, being seldom seen before May 10, this oriole is one of the commonest as well as widely distributed breeders within the County. It is particularly abundant among the large cottonwoods along the Grand River. In the Plateau Valley I have found it nesting in scrub-oaks within 15 feet of the ground. Frequents thickly settled portions and nearly every ranch house if surrounded by trees has its pair of orioles. Departs for the south in August. Mr. Sullivan's extreme dates of arrival and departure are May 5 and August 8.

Euphagus cyanocephalus. Brewer Blackbird. Summer resident, abundant. Fully as abundant and as widely distributed as the preceding species. Arrives late in March or early in April (my earliest date is March 31) and breeds about the middle of May. Large numbers of nests are destroyed by irrigation and as the birds are very persistent, the breeding season continues well into August. A favorite nesting site is a ditch bank in an alfalfa field, and wild rose thickets are often taken possession of by small colonies of from 20 to 50 pairs. When the young are able to fly the birds congregate in vast flocks which frequent the newly cut hay and grain fields feeding almost entirely upon insects. Departs for the south in October. Mr. Sullivan states that a few remain each winter around Grand Junction.

Hesperiphona vespertina montana. Western Evening Grosbeak. Winter resident, not uncommon. Information regarding this species is limited. They have been observed in February and April; and one flock August 3, 1899, at 6500 feet in Plateau Valley; but I am inclined to think the latter were stragglers from a higher altitude. Probably occurs regularly during the winter but never in any great abundance.

Pinicola enucleator montana. Rocky Mountain Pine Grosbeak. Resident, not common. This species is listed as above on the strength of two records. One taken on South Mamm Peak at about 10,000 feet July 3, 1898, and a pair seen April 4, 1902, in Plateau Valley at 6500 feet. They may possibly be of common occurrence in the few points of high altitude in the County.

Carpodacus cassini. Cassin Purple Finch. Resident, not common. This bird is a regular winter visitant up to at least 7000 feet often found in company with the Western Evening Grosbeak. I have not seen it in summer, but as Carter found it breeding commonly at Breckenridge not over 100 miles east, it will undoubtedly be found nesting in the higher portions of Mesa County.

Carpodacus mexicanus frontalis. House Finch. Resident, common in the lower altitudes. Probably one of the most numerous birds in the towns along the Grand River, but of rather uncommon occurrence above 6500 feet, where it is oc-

casionally seen during the early fall. Breeds thruout May and June, and performs a very slight, if any, vertical migration.

[*Loxia curvirostra stricklandi*. Mexican Crossbill. Carter found this bird breeding at Breckenridge and judging from its established range it is not unreasonable to expect to find it a regular resident, tho at all times rare.]

Leucosticte australis. Brown-capped Leucosticte. Winter resident. There does not appear to be any locality of sufficient altitude within the County boundaries to attract these birds during the summer. My only record is that of a large flock observed March 12, 1902, five miles southeast of DeBeque at about 5500 feet.

[*Acanthis linaria*. Redpoll. Another common bird whose absence from this list is hard to explain. Undoubtedly occurs regularly in winter and probably in some abundance at times.]

Astragalinus tristis pallidus. Western Goldfinch. Prof. Cooke says a few were seen November 11, 1895, by A. H. Howell at Grand Junction. There is no further information at hand regarding this bird.

Astragalinus psaltria. Arkansas Goldfinch. Summer resident, not uncommon. A late arrival and a late breeder, fresh eggs usually being found in July. More common in the lower portions of the County than higher up. Prof. W. W. Cooke mentions this form as breeding at Glenwood Springs, as it undoubtedly does in more or less abundance all along the Grand River from that point on down to the Utah line.

Spinus pinus. Pine Siskin. Resident, common. One of the commonest winter birds up to at least 7000 feet feeding in large flocks and frequenting the cultivated sections. Early in April the flocks break up and the birds retire to the higher mountains to breed. During the summer months they are very seldom met with. Mr. E. R. Warren reports a flock from Grand Junction, October 3.

Passer domesticus. English Sparrow. Resident, common. "Miss Myra Eggleston reports that they reached Grand Junction during the fall of 1899, a flock of a dozen being seen. This is the first record for Colorado west of the range, and there is nothing to indicate whether these birds reached Grand Junction from eastern Colorado or have come eastward from Utah. The distance is less from where they occur in Utah, and the mountain passes much lower." (Cooke's *Birds of Colorado*, 2nd App.) They first arrived in Plateau Valley during the fall of 1904 and in June, 1905, a nest with incubated eggs was destroyed. Since that time they have steadily increased in numbers.

Poæcetes gramineus confinis. Western Vesper Sparrow. Summer resident,



NEST OF THE WESTERN SAVANNA SPARROW IN DENSE
HAY FIELD; MESA COUNTY

abundant. Probably the most abundant breeding sparrow in the County. Arrives from the south the middle of April and breeds during May, June and July, raising two broods. Frequents cultivated sections and breeds abundantly in young grain and alfalfa fields up to at least 8000 feet. During late summer they are found in great numbers in the freshly cut hay and grain fields. Leaves for the south in October.

***Passerculus sandwichensis alaudinus*.** Western Savanna Sparrow. Summer resident, common. Arrives about the middle of April and breeds during May, June and July to at least 8000 feet, and raises two broods. Its favorite nesting site is in the alfalfa fields, where it conceals its nests in the dense alfalfa plants close to or upon the ground. In company with the Western Vesper Sparrow, Western Lark Sparrow and Western Chipping Sparrow it is abundant in the hay fields in late summer.

***Chondestes grammacus strigatus*.** Western Lark Sparrow. Summer resident, common. Not as frequently met with as the two preceding species, but by no means of uncommon occurrence. Their general habits do not differ greatly from the preceding. Mr. Sullivan's extreme dates of arrival and departure are April 1 and September 22.

***Zonotrichia leucophrys*.** White-crowned Sparrow. I have occasionally observed this bird in migration but have no information relative to its resident abundance. Judging from the fact that Carter found it breeding abundantly at Breckenridge I am inclined to think it is a regular summer resident in the higher portions of the County. Mr. E. R. Warren took one at Grand Junction October 2, 1905, and Mr. Sullivan considers it a common migrant there.

***Zonotrichia leucophrys gambeli*.** Intermediate Sparrow. Mr. Sullivan in speaking of this species at Grand Junction writes, "Common migrant. The most numerous of all the migrating sparrows. I have seen them here all winter (1903-4). Usually they disappear altogether. They are usually in the country from the south by April 1 to 15 and return October 1 to December 15.

***Spizella monticola ochracea*.** Western Tree Sparrow. Winter resident, abundant. The only sparrow occurring in any abundance during the winter months. Arrives in October and November and frequents wooded or cultivated sections up to at least 7500 feet. By April 1 nearly all have departed for their northern breeding grounds.

***Spizella socialis arizonæ*.** Western Chipping Sparrow. Summer resident, common. Arrives about the middle of April (my earliest date is April 2, 1902), and breeds up to at least 8000 feet, during May and June. It is more common below 6500 feet than above and frequents cultivated regions. It is particularly abundant during August and September in the hay fields. Mr. E. R. Warren has seen it at Grand Junction as late as October 3.

***Junco montanus*.** Montana Junco. Prof. Cooke says, "Several were seen and one collected, in late September, 1906, by Merritt Cary a few miles north of the northern line of the County. A day or two later he saw a flock of birds, inside the county limits that were undoubtedly the same species."

***Junco aikenii*.** White-winged Junco. ***Junco hyemalis connectens*.** Coues Junco. ***Junco mearnsi*.** Pink-sided Junco. Winter residents, abundant. All three of these Juncos occur abundantly thruout the winter, but I have very little definite information as to their relative abundance. Mr. Sullivan says that *connectens* is the commonest form found at Grand Junction. The bulk of the northward migration occurs about April 1.

***Junco caniceps*.** Gray-headed Junco. Summer resident. During the summer

months this is such an inconspicuous bird that I am unable to state in what abundance they occur. I have found them breeding at Alexander Lakes just outside the County and they are undoubtedly not uncommon breeders thruout the County in the higher altitudes.

***Amphispiza nevadensis*.** Sage Sparrow. Summer resident, common. Miss Eggleston says this bird is found quite abundantly in the sage-brush covered mesas, nesting in the tufts of bunch-grass. Prof. Cooke states that it is quite common on the sage brush plains of western and southwestern Colorado. I am inclined to think that it is much more common in the lower parts of the County than in those portions above 7500 feet.

***Melospiza melodia montana*.** Mountain Song Sparrow. Summer resident, common. Next to *P. g. confinis* this is the commonest sparrow during the summer. Arrives as early as March 15 and is abundant by April 1. Breeds late in May up to at least 7000. Its favorite breeding ground is in boggy "draws" in cultivated fields, where it builds either at the base of a stunted willow or in a thick tuft of alfalfa. Mr. Sullivan says the bird is an occasional winter resident around Grand Junction.

***Melospiza lincolni*.** Lincoln Sparrow. Prof. Cooke writes, "One found dead during the fall of 1895 by A. H. Howell at Grand Junction." There is no further information at hand regarding its occurrence in the County.

[***Passerella iliaca schistacea*.** Slate-colored Sparrow. Specimens of this species have been taken at Glenwood Springs, at the mouth of the Blue River in Middle Park, and in La Plata County, so it is not unreasonable to expect that it may be found in Mesa County, tho probably of rare occurrence.]

***Pipilo maculatus arcticus*.** Arctic Towhee. Prof. Cooke in his *Birds of Colorado* states that *arcticus* comes west only to the eastern base of the Rocky Mountains but the writer has towhee notes on February 18 and 21, and March 16, 17, 20 and 26 which he has attributed to this form owing to the accepted belief that *montanus* is strictly a summer resident. Mr. Sullivan also writes that he has observed towhees between December 22 and March 1. Miss Eggleston considers them rare at Grand Junction. Prof. Cooke in discussing this point says, "I have no record of the occurrence of *arcticus* in western Colorado, but it must be the form there for it breeds in Montana and is known as a common fall migrant in Utah and a common winter resident of southern Utah and southern Nevada. You are probably right but I wish you had a specimen to back it up."

***Pipilo maculatus montanus*.** Mountain Towhee. Summer resident, abundant. Occurs abundantly thruout the County up to 10,000 feet during the entire summer and breeds abundantly thruout the upper half of its range. The great bulk arrive late in April and breed the middle of May. Frequents the open scrub-oak hillsides in well watered localities. Seldom met with in arid sections.

***Oreospiza chlorura*.** Green-tailed Towhee. Summer resident, abundant. Above 6000 feet this species is fully as abundant as the preceding but owing to its inconspicuous habits is not so often noted. Arrives late in April and ascends at once to the higher portions of the County and by the middle of May is abundant up to 9000 feet. Breeds about June 15 and frequents open hillsides covered with low service-berry bushes which seem to be a favorite receptacle for the nests.

***Zamelodia melanocephala*.** Black-headed Grosbeak. Summer resident, common. A common bird up to at least 7500 feet, frequenting the dense growth along streams, and nesting thruout its range. Arrives in May and breeds early in June. Departs south in September. Mr. Sullivan's extremes of arrival and departure at Grand Junction are April 20 and October 2.

***Cyanospiza amœna*.** Lazuli Bunting. Summer resident, common. A char-

acteristic species up to at least 7000 feet, but much more common between 5000 and 6000 feet. Frequents open scrub-oak country in well watered localities and breeds late in June and in July, usually selecting a scrub-oak in dense growth as a nesting site.

***Piranga ludoviciana*.** Louisiana Tanager. Summer resident, not uncommon. Typically a bird of the higher altitudes, where it frequents the heavy spruce timber during the breeding season. Occasionally seen as low as 6500 feet, in pinyon timber during June and July but not by any means common. Much more in evidence in the lower portions of the County during the fall migration, when they are quite common. During the return movement in spring they are not so conspicuous.

***Piranga erythromelas*.** Scarlet Tanager. Mr. Sullivan writes, "Only one seen; date June 4, 1904. The red and black markings were too plain to admit of



NEST AND EGGS OF GREEN-TAILED TOWHEE IN SERVICE-BERRY BUSH

doubt. I hardly think they breed." This record while an exceedingly strange one is well supported by Prof. Cooke's record of 2 birds taken at New Castle during the spring of 1892, which is only about 70 miles up the river from Grand Junction.

***Progne subis*.** Purple Martin. Summer resident, occurrence doubtful. Prof. Cooke says, "As common in Utah as in the east and not uncommon in the extreme western part of Colorado." And again, Miss Myra Eggleston writes that the Purple Martins are common at Grand Junction, but do not breed in town, preferring the banks of the river not far distant." Mr. Sullivan takes issue with this latter statement and says that extensive inquiry among the older residents of Grand Junction failed to reveal a single one who had ever seen this bird there, and that in his own observations covering about three years he had only seen it once. He closes a lengthy and interesting discussion of the subject by saying, "Therefore on

the whole proposition of Martins in Mesa County I can positively say that they are only accidental here (Grand Junction), and have not bred here for over twenty years." I have occasionally seen them during June and July at a big beaver meadow at the head of Beaver Creek at about 9000 feet and am satisfied that they breed there.

Petrochelidon lunifrons. Cliff Swallow. Summer resident, abundant. Probably occurs in greater numbers within the County boundaries than any other bird. Breeds in immense colonies from the lowest parts of the County up to at least 9000 feet. There are several large colonies to be seen from the car windows in Grand Canyon just below DeBeque. Large flocks often take possession of barns and other out-buildings tho most of the birds resort to the sandstone ledges to breed. Arrives about May 1 and is rather irregular about nesting, but the bulk breed late in June. They are persistent birds and will rebuild repeatedly if the nests are destroyed. Departs south early in September. Mr. Sullivan's extreme dates of arrival and departure are April 29 and September 17.

Hirundo erythrogaster. Barn Swallow. Summer resident, common. Nearly every ranch in the County has a few pairs of Barn Swallows nesting in the barns and outbuildings during the summer, and while they occur fully as regularly thruout the County as *P. lunifrons* they are no where found in such large numbers. Arrives about May 1 and begins nest building at once; but the eggs are rarely laid before June 1, and two and sometimes three broods are raised in a season. Mr. Sullivan's extreme dates of arrival and departure are April 27 and September 3.

Iridoprocne bicolor. Tree Swallow. Mr. Sullivan writes regarding this species, "A few noted here in company with the succeeding (Violet-green Swallow). The time of arrival and departure corresponds to the Violet-green Swallow. I do not know that they breed; probably do in favored localities." This is the only definite information at hand altho the writer has often seen a bird in Plateau Valley that he took to belong to this species.

Tachycineta thalassina. Violet-green Swallow. Summer resident, abundant. While it is more abundant in the higher portions of the County, it is common everywhere, nesting principally above 6000 feet during June and July. The writer has found it breeding both in hollow trees and in cavities in sand banks. Arrives about May 1 (my earliest date is April 22 at DeBeque) and departs for the south in September. Mr. Warren has seen it at Grand Junction as late as September 30.

Riparia riparia. Bank Swallow. Mr. Sullivan says of it, "Reasonably plentiful and breeds. Six young nearly ready to fly were dug out of a bank on the Gunnison River on July 2, 1904. Extreme dates are May 1 and September 1." I have been unable to secure any further information on this species' occurrence in Mesa County.

Ampelis garrulus. Bohemian Waxwing. Winter resident, rather common locally. In Plateau Valley this bird is a regular winter resident from 6000 to 7000 feet, feeding in large flocks and frequenting well timbered creek bottoms. They arrive with the first severe weather and leave for their breeding grounds early in April. Miss Eggleston reports them as rare migrants at Grand Junction.

Lanius borealis. Northern Shrike. Winter resident, not common. Occasionally seen in all parts of the County during the winter months. A bird of solitary habits, never seen except singly or in pairs, and does not occur in large numbers at any time. Its stay in Colorado is largely governed by climatic conditions, arriving and leaving with severe weather.

Lanius ludovicianus excubitorides. White-rumped Shrike. Miss Eggleston

classes this bird as resident and says, "While not as common as the Northern Shrike it is found in limited numbers near Grand Junction. In the fall and early spring it has a voice not unlike the mockingbird tho not so varied. Grasshoppers and occasionally even mice are seen hanging from the barbs of the wire fences, impaled by the shrikes. The bird seems to like human companions and nests in the chico near some dwelling." Mr. Sullivan also classes it as resident but never very plentiful, and says it breeds near Grand Junction. Mr. E. R. Warren writes, "One or two seen September 26, and on October 4 several more seen between Grand Junction and Palisades. The writer has seen the bird occasionally in Plateau Valley during the summer, but never in the winter.

Vireo gilvus swainsoni. Western Warbling Vireo. Summer resident, common. A rather late arrival in the spring, and goes at once into the well timbered country, where it breeds late in June, mostly about 7500 feet, frequenting creek bottoms and nesting in cottonwoods. A very inconspicuous bird and probably a larger part of its occurrence is overlooked by observers in the field owing to its seclusive habits.

[**Vireo solitarius plumbeus.** Plumbeous Vireo. A common summer resident thruout the mountains of the State. Should thus be found in more or less abundance thruout eastern Mesa County.]

Helminthophila virginiae. Virginia Warbler. Regarding this bird Miss Eggleston writes, "Regular migrant, possibly occasionally breeding. These birds are so quick in their movements, that they are hard to watch. They come when the early trees leaf out and are quite common until the heat of summer drives them to higher altitudes." Prof. Cooke states that "in western Colorado it is abundant in migration and in many places is the most common warbler during the breeding season." Thus it is probably more or less abundant during the summer thruout the higher portions of the County.

[**Helminthophila celata lutescens.** Lutescent Warbler. A not uncommon summer resident thruout western Colorado. Undoubtedly occurs in more or less abundance thruout the mountains of Mesa County, altho there are no definite records of its occurrence up to date.]

Dendroica aestiva. Yellow Warbler. Summer resident, abundant. By far the commonest breeding warbler thruout the County up to at least 7000 feet. Arrives the first of May and breeds in June. Nests of this bird seem to be the favorite receptacle for eggs of the Cowbird. Much more common below 6500 feet than above. Probably the Grand River bottom is the center of abundance of the species in the County. Departs south early in September. Mr. Sullivan's extreme dates of arrival and departure are April 28 and September 7.

Dendroica auduboni. Audubon Warbler. Summer resident, common; in migration abundant. Strictly a bird of the higher altitudes during the breeding season, when it frequents heavy coniferous timber from 8000 to 10,000 feet. During the fall migration especially it is very plentiful thruout the lower part of the County. Arrives early in May (May 7 is my earliest date), breeds thruout June and July and the southward migration begins late in August, altho Mr. Warren has seen it at Grand Junction as late as September 27.

Dendroica nigrescens. Black-throated Gray Warbler. The only information at hand regarding this species comes from Mr. Sullivan who says, "A single one seen in front of my house May 12, 1904." This species should occur as commonly in Mesa County as in any county in the State, but is never plentiful anywhere within the State.

[**Dendroica townsendi.** Townsend Warbler. Cooke says, "A western species coming east to the base of the foothills. Rather rare in summer, breeding from 5500 to 8000 feet in western Colorado.]

***Geothlypis tolmiei*.** Tolmie Warbler. Miss Eggleston writes regarding this species: "Migrant. For a few days in the first warm weather these warblers are heard and seen in the trees bordering the road-ways. They do not remain long however." Prof. Cooke states that this is one of the commonest warblers of western Colorado, so should be found more or less abundantly as a breeder thruout the higher portions of Mesa County.

***Geothlypis trichas occidentalis*.** Western Yellowthroat. Miss Eggleston says of this warbler, "Summer resident, arriving early in May. These birds stay thruout the summer near Grand Junction." The writer has never seen the bird in Plateau Valley.

***Icteria virens longicauda*.** Long-tailed Chat. Summer resident, not uncommon in the lower part of the County. The only place I have seen this bird is along the Grand River bottom, where it is a regular summer resident and undoubtedly breeds. It was not recorded in Plateau Valley at 6000 to 6500 feet during seven years' observation and its occurrence is probably rare any distance above the Grand River. Mr. Sullivan has found them breeding near Grand Junction but says the birds are very scarce. He says, "Toward August the bird becomes almost silent and toward the close of that month it slinks around the bushes, silently diving here and there into the brush and undergrowth that were once its home, making one wonder at the transition from the noisy customer of the early spring."

***Wilsonia pusilla pileolata*.** Pileolated Warbler. Prof. Cooke writes, "Several seen September 20-23, 1906, by Merritt Cary a few miles north of the northern boundary of Mesa County. As these birds were there in fall migration, they would have entered the County a few hours later."

***Anthus pensilvanicus*.** American Pipit. Miss Eggleston writes of this species, "Early in the spring these birds arrive in large flocks. They start from the ground or low bushes and fly upward with a startled cry, remain almost stationary in the air for an instant and then drop quickly back again showing the white of their tail as they alight." It is not probable that the County affords any regions of sufficient altitude for their nesting site as they never breed below timberline.

***Cinclus mexicanus*.** American Dipper. Resident, common locally. The dipper is rather common in all suitable localities from 6000 feet up during the summer and breeds wherever found. During the winter they move somewhat lower, but thruout the severest weather are found as high as 6000 feet. The nesting period extends thruout June and first half of July. Frequents the clear rapid mountain streams.

***Oroscoptes montanus*.** Sage Thrasher. Summer resident, not uncommon. Miss Eggleston writes, "These birds are quite common on the long stretches of un-irrigated land covered only with sage brush." Breeds in the lower part of the State wherever sage-brush or grease-wood is plentiful, but is much more common in migration than as a breeder. During the migration period they are quite common up to at least 6500 feet.

***Mimus polyglottos leucopterus*.** Western Mockingbird. Mr. Sullivan says, they breed but are not very plentiful and are usually wary and hard to approach. He says they depart for the south about September 1. Miss Eggleston writes, "Summer resident. With us near Grand Junction this bird breeds, bringing out two broods each season. Evidently the same pair returns each year, for a nest in a pile of prunings from an orchard was inhabited season after season."

***Galeoscoptes carolinensis*.** Catbird. Summer resident, not common. Occasionally found in suitable localities up to at least 7000 feet and breeds as high as

6500. Not common enough at any time to ascertain migration dates. Mr. Sullivan, speaking of one observed July 3, 1904, classes it as probably accidental."

Salpinctes obsoletus. Rock Wren. Summer resident, common. Wherever suitable breeding grounds are available the Rock Wren is sure to be found. It is equally abundant about sand-stone ledges in the dry winter range country and along the stone fences in cultivated sections. Arrives about May 1, breeds three weeks or a month later and leaves the County early in October. Mr. Warren reports them as common near Grand Junction the first week in October.

Catherpes mexicanus conspersus. Canyon Wren. The only absolute record at hand is one bird taken at Grand Junction by H. G. Smith March 3, 1906, which is now in the collection at the State Capitol; but there is every reason to believe that this species is more common in Mesa County than in any other county in the State. Mr. Sullivan saw a pair of Wrens May 4, 1904, which he attributed to this species. Prof. Cooke reports them as common around DeBeque early in October, 1906, and several seen at Grand Junction in November, 1895.

Thryomanes bewicki leucogaster. Baird Wren. Prof. Cooke says, "Several seen and one collected November 2, 1895, by A. H. Howell at Grand Junction." This is the only Mesa County record at hand.

Troglodytes aedon parkmani. Western House Wren. Summer resident, abundant. A common bird thruout the County, but much more abundant about 6500 feet than below and thruout the quaking-aspen regions is one of the most abundant breeders. Arrives early in May, breeds about the middle of June and as soon as the young are able to fly ascends to 9 or 10,000 feet in search of insect food. During the month of August they are more abundant than any other bird on the Grand Mesa. Depart for their winter home late in September. Their choice of a nesting site varies greatly. Nearly every deserted cabin has its pair of Wrens, nesting in the crevices between the logs. Gate-frames, boxes, old woodpecker holes, natural cavities and deserted mud nests of the Cliff Swallow are favorite sites.

[Telmatodytes palustris plesius. Interior Marsh Wren. "Occurs in Routt County where it winters in the hot water swamps" (Cooke). Probably occurs in Mesa County as a rather rare summer resident.]

Certhia familiaris montana. Rocky Mountain Creeper. Regarding this bird Miss Eggleston says, "Occasional visitor. This bird's visits are uncertain as to time or occasion around Grand Junction. Sometimes in midwinter its cry is heard and a little investigation will locate him creeping up the vines on some of the large buildings or working around the cracks in the bark of the fruit trees. It is not shy and can be watched closely after being located."

Sitta carolinensis nelsoni. Rocky Mountain Nuthatch. Resident, not uncommon. Much more in evidence in winter than in summer, when it is rather common in the cedars and pinyons from 6000 to 8000 feet. During the summer when they retire to heavy timber in the higher altitudes, they are very unobtrusive and are rarely seen, but it is reasonable to suppose that they are fairly common breeders. There is one bird at the State Capitol collected by Mr. H. G. Smith at Grand Junction, November 17, 1903. Mr. Sullivan only saw it twice in Grand Junction in three years' observations, one of which was the above mentioned bird.

[Sitta canadensis. Red-breasted Nuthatch. Cooke gives this bird as resident in the mountains tho not so common as *nelsoni* or *pygmaea*. It is probably of regular tho uncommon occurrence in eastern Mesa County.]

[Sitta pygmaea. Pigmy Nuthatch. An abundant bird thruout the mountain region of the State. It undoubtedly is a rather common resident in Mesa County and has simply been confused with *S. c. nelsoni* by field workers.]

Bæolophus inornatus griseus. Gray Titmouse. Prof. Cooke says that several

were seen and one collected in early November, 1895, by A. H. Howell at Grand Junction. This is the only record at hand for Mesa County.

***Penthestes atricapillus septentrionalis*.** Long-tailed Chickadee. Resident, not uncommon. While this species is often seen during the winter in the lower parts of the County, it is not nearly so common as the following species and is more typically a bird of the lower altitudes than *gambeli*. They probably nest in the higher portions of the County, but the writer has not observed them during the summer.

***Penthestes gambeli*.** Mountain Chickadee. Resident, common. The most abundant chickadee in Mesa County, far outnumbering *P. a. septentrionalis*. During the winter they are common along the well wooded creek bottoms up to at least 7000 feet even during the most severe weather. As is the case with the two preceding species they are not much in evidence during the summer, but are undoubtedly common breeders from 9000 feet up. Mr. Sullivan says they occur from October to April at Grand Junction.

***Psaltriparus plumbeus*.** Lead-colored Bush-tit. Prof. Cooke says, "Several were seen November 13, 1895, by A. H. Howell at Grand Junction." This is the only record at hand for Mesa County; but during the summer of 1898 Mr. Wm. Cross took a set of eggs at Glenwood Springs, within twenty miles of the northern boundary of the County.

***Regulus calendula*.** Ruby-crowned Kinglet. Summer resident, not uncommon. Owing to their quiet and retiring habits it is not improbable that these tiny birds are much more common than general observations might lead one to believe. They are typically birds of the higher altitudes during the breeding season, which is at its height the latter part of June. The writer saw one bird June 15, 1897, at an altitude of only 6500 feet, but this was evidently either a straggler or a late migrant.

[***Regulus satrapa olivaceus*.** Western Golden-crowned Kinglet. Cooke states that this bird occurs thruout the State in migration. There is probably no place in the County of sufficient altitude to attract these birds during the breeding season.]

***Polioptila cærulea obscura*.** Western Gnatcatcher. There are three Gnatcatchers in the collection at the State Capitol collected by Mr. W. C. Ferrill near Grand Junction, May 17, 1906, which, altho they have not been positively identified, are probably referable to this sub-species. This is the first record for west of the range.

***Myadestes townsendii*.** Townsend Solitaire. Resident, not common. During the winter months they are occasionally seen in the lower parts of the County, but seldom in any numbers. Their migration, which is largely if not wholly a vertical one occurs late in April and by May 15 they have reached the extreme upper edge of their range, where they breed during June and July.

***Hylocichla ustulata swainsoni*.** Olive-backed Thrush. Summer resident. On August 1, 1905, the writer found a deserted nest containing two fresh eggs of this bird at an altitude of about 6500 feet, on Grove Creek in Plateau Valley. I have no further information regarding the occurrence of this species in Mesa County.

***Hylocichla guttata auduboni*.** Audubon Hermit Thrush. Summer resident, common. The only Thrush occurring commonly in the County. Arrives late in May, breeds in June and July and departs for the south in September. July 24, 1901, the writer found a nest containing three incubated eggs of this species on Grove Creek at an elevation of about 6500 feet, but I am inclined to believe the great bulk breed from one to three thousand feet higher than this. Frequents well-timbered creek bottoms but on account of its retiring habits is seldom seen. One of the most delightful songsters among American birds.

Planesticus migratorius propinquus. Western Robin. Summer resident, abundant. One of the first arrivals in the spring, often being seen as early as February 15, and one of the commonest breeders from the lowest parts of the County up to 10,500 feet. My earliest date of arrival is February 8, and by March 15 they are common. Nests wherever there is timber, during May and June, and raises two broods. Performs a slight vertical migration as soon as the young are able to fly and bands together in flocks for the fall migration in October and November. Mr. Sullivan says, "Undoubtedly remain all winter; that is, a few here and there."

[**Sialia mexicana bairdi.** Chestnut-backed Bluebird. A western species that occurs sparingly thruout western Colorado. Probably occurs in Mesa County rather rarely in summer.]



WESTERN ROBIN IN NEST BUILT UNDER STRAW ROOF OF ROUGH POLE
CATTLE SHED; MESA COUNTY

Sialia arctica. Mountain Bluebird. Summer resident, abundant. Thruout the dry cedar and sage-brush country the Mountain Bluebird is very abundant, nesting in natural cavities in the cedars. Mr. Sullivan says they are not at all common around Grand Junction after the spring migration is over. They are very early migrants, arriving about the middle of February and nesting late in April and in May and raising two broods. The bulk nest between 5000 and 6000 feet, but they are not uncommon up to at least 7000. In the cultivated sections they resort to gate-frames, bird boxes, etc., for nesting sites. The fall migration occurs in October. Mr. Sullivan's extreme dates of arrival and departure are February 11 and October 16.

Denver, Colorado.

FROM FIELD AND STUDY

Microscopic Subspecies.—While collecting along the Kern River, Greenhorn Range, Southern Sierras, about 45 miles from Bakersfield, Kern County, California, I secured several vireos which upon comparison were determined to be *Vireo huttoni*. Upon sending them to Mr. H. C. Oberholser, however, he identifies them as *V. h. oberholseri* Bishop.

In discussing *V. h. oberholseri* in November CONDOR, described by Dr. L. B. Bishop (CONDOR September, 1905, pp. 142-143), Mr. Grinnell states that his series of 47 skins from Los Angeles County (inclusive) to Siskiyou County, are distinctly *V. huttoni*; but the specimen from Escondido, San Diego County, is different, and referable to *V. h. oberholseri*, as described by Dr. Bishop.

Doesn't it seem a bit curious that *Vireo huttoni oberholseri* be found fairly common in February and March in Kern County, with *V. huttoni* on all sides?

Of course, being an amateur in ornithology, I can only open the question and leave it to more advanced ornithologists to elucidate. I wish to add, however, that Mr. Oberholser identified my Santa Cruz Island Vireos (*Vireo mailliardorum* Grinnell) as *V. huttoni*. Mr. Grinnell identified my Kern County specimens as *V. huttoni*! My specimens from Los Angeles County they both identified as *V. huttoni*.

I do not mean this to be discourteous to the gentlemen who are responsible for these subspecies. It is merely an example of existing conditions regarding the microscopic differences upon which many subspecies are based; and to show the position in which young ornithologists are placed thereby. I have a large number of subspecies that have been variously identified by leading ornithologists.—C. B. LINTON, *Long Beach, California*.

The Virginia Rail (*Rallus virginianus*) Breeding in Mexico.—While carrying on field investigations for the Biological Survey near Lerma, in the Valley of Toluca, State of Mexico, I obtained a Virginia Rail and three sets of eggs (5, 4 and 6 respectively), July 8-10, 1904. The nests were placed among tules (*Scirpus*) and cat-tail flags, in the large marshes forming the headwaters of the Rio de Lerma, at about 8600 feet altitude.

This is the first record of the nesting of *Rallus virginianus* in Mexico.—E. A. GOLDMAN, *Biological Survey, Washington, D. C.*

A Correction.—The "Mexican Black Hawk" recorded by me in the July, 1907, CONDOR, page 110, from San Diego County, California, is now determined to be a typical *Buteo abbreviatus*. This specimen is, I believe, the second record for California. The first was taken by Dr. J. G. Cooper in 1862, also in San Diego County. I secured this specimen within the city limits of National City, San Diego County, California, November 26, 1906.

I may add in self defence, that the identification as *Urubitinga anthracina* was made by several ornithologists. Later Mr. Grinnell pronounced it *Buteo abbreviatus*. I then sent it to the National Museum; it was returned labeled *Buteo borealis calurus*, melanistic phase. Mr. Oberholser now determines it to be *Buteo abbreviatus*, confirming Mr. Grinnell's decision.—C. B. LINTON, *Long Beach, California*.

The Western Tanager in San Francisco.—On May 6, 1908, while passing thru Lafayette Square (a park two blocks square in this city), I noticed a pair of unfamiliar birds flying from tree to tree in a eucalyptus hedge. I walked cautiously in their direction and was rewarded by being able to get within ten feet of the male bird, a Western Tanager (*Piranga ludoviciana*); that the other was a female I am not quite so certain. This species was not included in Ray's "Summer Birds of San Francisco County", a paper which appeared in THE CONDOR for March, 1906.—CLARK C. VAN FLEET, *San Francisco, California*.

Otocoris alpestris insularis on the Mainland Coast.—On December 4, 1907, I observed a large flock of *O. a. insularis* at Alamitos Bay, Los Angeles County, California, and secured one adult male. I was positive of the identity of the specimen myself, but to be doubly certain I forwarded it to Mr. H. C. Oberholser, who confirms my identification.

There is no doubt, in my mind, that *O. a. insularis* is a regular winter visitant to the mainland coast district of Los Angeles County, at least.—C. B. LINTON, *Long Beach, California*.

The Southern Limit of the Chestnut-backed Chickadee (*Parus rufescens*) on the California Coast.—From my knowledge of the character of the humid coast belt of southern Sonoma County, and its similarity to the most southerly recorded habitat of *Parus rufescens*, I have long suspected that this form of chickadee extended much further south than was ordinarily supposed. Yet it was not until last May (1908) that I went into this doubtful region to prove

the supposition correct. This chickadee is recorded as inhabiting the Redwood and Douglas Fir forests, known as the Northern Humid Coast Belt, extending along the coast from Del Norte County down to Mendocino. As this same forest extends continuously along the coast of Mendocino and Sonoma Counties, practically without a break, and with but comparatively little variation in temperature or humidity, it seemed reasonable to assume that any chickadee found in this belt as far south as it might continue with unchanged characteristics, would be referable to this form. To prove this I visited the coast last May in the vicinity of Fort Ross, the site of the early Russian settlement, which is only a few miles north and in plain sight of the mouth of the Russian River, and there found the Chestnut-backed Chickadee breeding abundantly. It has never been recorded south of Mendocino County heretofore. This forest extends about twenty miles south of where I found these birds, and almost reaches Marin County, when the character of the coast abruptly changes from high hills and deep canyons to low rolling country, and the forest is succeeded by open, wind-swept grass lands, with plenty of fog but comparatively light rainfall. This treeless portion extends for something like twenty miles south along the shores of Bodega and Tomales Bays, and forms a most distinct dividing line between the northern form of *rufescens* and the central one, *neglectus*, which latter commences in the northern edge of the wooded coast belt of Marin County some ten miles north of San Geronimo.—JOSEPH MAILLIARD, *San Geronimo, California*.

Is not the San Clemente Shrike (*Lanius l. mearnsi*) identical with the Island Shrike (*Lanius l. anthonyi*)?—The following measurements (from birds in the flesh) seem to disprove the claim for smaller size, for the Clemente form. In the specimens examined (16 in all), there has been found no appreciable difference in coloration. A few specimens of *Lanius l. anthonyi* have been taken along the coast of Los Angeles County.

San Clemente Island specimens				Santa Cruz Island specimens			
	Length	Wing	Tail		Length	Wing	Tail
ad. ♀	9.	4.	4.	im. ♂ ?	8.40	3.80	3.80
♀	8.46	3.75	3.75	ad. ♂	8.50	3.80	3.90
♂	8.47	3.75	3.75	ad. ♂	8.72	3.85	3.90
im. ♂	7.87	3.72	3.75	♀ ?	8.	3.77	3.72
im. ♀ ?	7.87	3.75	3.70	im. ♀	8.	3.70	3.70
ad. ♀	8.	3.80	3.70	ad. ♀	8.27	3.80	3.75
				♀	7.70	3.75	3.50
				ad. ♀	8.	3.77	3.63
				♀	8.25	3.95	3.87
				♂	8.87	4.	4.18

Measurements in inches

—C. B. Linton, Long Beach, California.

A One-legged Red-winged Blackbird.—On April 5, while collecting in the vicinity of Littleton, Arapahoe County, Colorado, I took a Red-winged Blackbird from a good sized flock in a tall cottonwood tree. Upon picking the bird up I found that the right leg was entirely missing. The bird was carefully skinned and it was found that the leg had been severed from the body at the knee joint. There was no scar or abrasion of any kind in the skin to indicate where the skin of the leg was attached to that of the body, the wound having healed perfectly.

The question was raised as to whether the bird had been hatched with the one leg missing; but this seems hardly reasonable from the fact that the first joint or that above the knee was perfectly formed.

That this bird handled itself almost as easily as his more fortunate companions is without question, as the flock was watched some time before the bird was taken and his actions were not such as to attract attention. In fact this particular bird was collected especially on account of the fine condition of its plumage. Upon skinning, the bird was found to be a male, in perfect condition and with a well nurtured body.—R. B. ROCKWELL, *Denver, Colorado*.

Forbush Sparrow in Southern California.—February 12, 1908, I secured three specimens of *Melospiza lincolni striata* (Forbush Sparrow), in the meadows bordering the Los Angeles River, near Long Beach, California. I also observed several others in this vicinity in company with *Melospiza cinerea cooperi* (San Diego Song Sparrow).—C. B. LINTON, *Long Beach, California*.

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

JOSEPH GRINNELL, Editor, - Berkeley, Cal.

J. EUGENE LAW, Business Manager, Hollywood, Cal.

WILLIAM L. FINLEY } Associate Editors
ROBERT B. ROCKWELL }

Hollywood, California: Published August 28, 1908

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One Dollar and Fifty Cents per Year in the United States, Mexico, and U. S. Colonies, payable in advance.

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One Dollar and Seventy-five Cents per Year in all other countries in the International Postal Union.

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Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the Editor.

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EDITORIAL NOTES

We received three responses to our request for someone to compile the ten-year index to *THE CONDOR*. Messrs. Kaeding, Pemberton and McGregor each separately asserted their willingness to undertake the work, which, by the way, is no easy or quickly accomplished operation, as these gentlemen fully understood. This just shows that there are men ready to *work* in the cause of Ornithology and our magazine. The ultimate usefulness of a ten-year index to active ornithologists is too obvious to need emphasis here.

By reason of precedence in applying, Mr. H. B. Kaeding was "awarded the contract", and he promises its completion soon after the first of the coming year.

Another problem confronts us, that of financing this index. We should like to issue it free to all Cooper Club members who desire it. This would mean that relatively few copies would be bought, as there are but few sets of *THE CONDOR* outside of Club membership. In other words we cannot depend upon the sale of copies to pay the cost of printing the index. This expense (about \$100) must be provided for by contribution. The Editor now solicits correspondence relative to this matter.

In view of the kaleidoscopic changes in the nomenclature of our birds it is no wonder that the lay ornithologist has become confused. Articles received by us for publication in *THE CONDOR* present a variety of scientific names. Those of the 1895 A. O. U. Checklist, without Supplements, are still the ones most commonly employed. Yet the newer rulings of the A. O.

U. Committee are often introduced in greater or less proportion; so that a lack of uniformity prevails in our pages.

The question arises as to the responsibility of the Editor for the scientific names employed in the articles. It seems to us there should be uniformity. Sometimes we are requested to bring the nomenclature of the article submitted up to date, and this we try to do in such cases (to the best of our knowledge). But in other instances, it would be the extreme of officiousness for the Editor to modify the names in any way. Thus we are in a quandary. As soon as the new A. O. U. Checklist appears (early in 1909), we shall ask our contributors to conform to its nomenclature exactly, except in special cases where they have critical reason to differ. But until then, chaos will probably continue to prevail.

A great deal of nonsense has been written of late in support of bird protection. The cause is worthy enough. But we doubt the ultimate efficacy of bland mis-statement. So often the decrease or disappearance of game and song birds is laid to the "greed of the sportsman", or to the pot-hunter and his "quest of the almighty dollar." These are doubtless destructive factors in some cases. But the present status of the buffalo or of the passenger pigeon cannot be laid to that cause, as has been re-iterated. Numerous railroads, fences, stock-ranches, and farms, would altogether prevent the buffalo from existing, with its inherent habits, at the present day. The destruction of the hard-wood forests, on the breeding grounds of the passenger pigeon, removed its food supply.

The rapid settlement of the West is accomplishing mighty faunal changes. The cutting of timber, clearing of brush-lands, drainage of swamps, and cultivation of prairies, are bound to bring about the scarcity or total extinction of many of our native birds and mammals. Others will increase, and new ones will invade our territory as it changes. Perhaps no one factor is having so profound an effect on the fauna of certain parts of California, as the diversion of mountain streams for power or irrigation. But all of this is a necessary accompaniment of the growth of the nation; and its effects upon the native life of the region must be accepted philosophically by nature lovers. It can't be helped, and there is no use of fuming, and calling our fellow men greedy, and commercial, and cruel.

We learn that Mr. John F. Ferry, of Lake Forest, Illinois, returned on June 8 from the Isthmus of Panama, having completed a collecting tour for the Field Museum of Chicago. Mr. Ferry brought home with him a valuable and extensive series of birds' skins and eggs, secured by himself in Costa Rica, Venezuela and Panama. These are now being arranged and classified at the Museum, where Mr. Ferry is assistant in the department of ornithology.

The lateness of the present issue of *THE CONDOR* is due to the Editor's three months absence in the field, from which it was out of the question to try to handle the proof. From now on our address is *Berkeley, California*.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

MAY—The regular meeting of the Northern Division of the Cooper Ornithological Club was held in the Oakland Chamber of Commerce on the evening of May 2, President D'Evelyn in the chair. Dr. Palmer of the Biological Survey and a number of other members were in attendance.

The minutes of the previous meeting were read and approved. Letters were then read from the State Fish Commission and W. Scott Way of the Audubon Society in which the Club was thanked for the stand it had taken in the prosecution of members of the Club who have been dealing commercially in bird skins and eggs. On motion of Mr. Hunter a committee was then appointed by the Chair to investigate more fully the matter and report at the next meeting. J. S. Hunter and E. W. Gifford were appointed.

A discussion was had concerning the relation between the Audubon Society and the Cooper Club; while no definite action was taken it seemed the general feeling that the two organizations were working toward the same end but from two different points of view and that it is better that they continue so.

J. G. Bliss of 3281 Briggs Avenue, Alameda, and Geo. J. Obermuller, of Hayward, were elected to membership, their names having been proposed at the March meeting. The election of Luther J. Wyman by the Southern Division was approved. Mr. Emerson proposed the name of Dr. La Ella Cool Walker, 509 13th and Washington Streets, Oakland, and Dr. D'Evelyn that of Dr. Clarence E. Edwards of the California Promotion Committee; both of the names to be acted upon at the next meeting.

A number of letters were read, by the secretary, from various parts of the State in answer to a circular letter sent out to determine the status of the English Sparrow and the relation of that bird to the agricultural and horticultural interests of the State. Discussion on this matter was held over until the next meeting.

After the business session Mr. J. R. Pemberton gave a most interesting talk on the birds of the Arroyo Mocho region in the southern part of Alameda County. Mr. Pemberton's talk was listened to very closely and was thoroly enjoyed by those present. It was followed by a considerable discussion which brought out additional points of interest.

Dr. Palmer was then called on by the Chair to say a few words. He called attention to several items of interest in Mr. Pemberton's talk that had been overlooked in the previous discussion, and also spoke concerning the distribution of the English Sparrow in the State. Dr. Palmer's talk was greatly appreciated by

the Club as it is not often that we have the pleasure of listening to one of his standing.

J. S. HUNTER, *Secretary*.

SOUTHERN DIVISION

MAY—The May meeting was called to order by President Morcom at his home on North Raymond Avenue, Pasadena, at three o'clock p. m., May 17, 1908, with members present, Harry Swarth, W. B. Judson, J. Grinnell, Howard Robertson, O. W. Howard, Chester C. Lamb, Pingree I. Osburn, Willard Chamberlain and H. T. Clifton. In the absence of the Secretary, on motion by Mr. Grinnell, duly seconded, Mr. Clifton was appointed Secretary pro tem.

The minutes of the last meeting, April 26, 1908, were read and approved. On motion by Mr. Robertson, seconded by Mr. Lamb and duly carried, Mr. L. E. Wyman was unanimously elected to active membership in the Club, his application already having been approved by the Northern Division. The application of Miss Annie M. Alexander to membership in the Club was presented by Mr. J. Grinnell and action deferred in accordance with the by-laws until the next meeting.

The report of the Committee on Club Policies, consisting of Messrs. Miller, Grinnell and Robertson, was presented and discussed. On proper motion the report was accepted and the committee discharged.

No formal program was presented, the remainder of the afternoon being occupied by ornithological chat and very dainty refreshments. This meeting was particularly pleasant as the home-welcoming of Mr. Harry Swarth, formerly one of our active members but who has for some years been connected with the Field Museum of Chicago as taxidermist. Mr. Swarth now takes a place in the active force of the University of California Museum of Vertebrate Zoology.

H. T. CLIFTON, *Secretary pro tem*.

JUNE—The June meeting was called to order by President Morcom at the office of Mr. H. J. Lelande, in the City Hall, Los Angeles, California, Thursday evening, June 25, 1908, with members Loye Holmes Miller, H. J. Lelande, W. Lee Chambers, Alphonse Jay, John M. Willard and J. E. Law present.

The minutes of the last meeting, May 17, 1908, were read and approved. On motion by Mr. Lelande seconded by Prof. Miller and duly carried, the Secretary was instructed to cast the unanimous ballot of those present electing Miss Annie M. Alexander to active membership in the Club, subject to the approval of the Club-at-large.

The remainder of the evening was spent in ornithological chat. Adjourned.

J. EUGENE LAW, *Secretary*.

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THE CONDOR

A Magazine of Western
Ornithology



Volume X

September-October, 1908

Number 5



W.K.V.

COOPER ORNITHOLOGICAL CLUB

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Entered as second-class matter February, 1908, at the post office at Los Angeles (Hollywood Station), California, under Act of Congress of March 3, 1879.

Issued from The Office of The Condor, First National Bank Building, Hollywood, Cal.

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The Post Office Department now denies to publishers the second-class mailing privileges where subscribers are six months delinquent. Therefore if you want to keep your files complete, it is well to send in your renewal promptly.

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THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume X

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BIRDS OF A VOYAGE ON SALTON SEA

By J. GRINNELL

WITH FOUR PHOTOS BY THE AUTHOR

ON the morning of April 19, 1908, in company with Chas. Richardson, Jr., and Donham, the boatman, I started from Mecca, California, for a cruise on Salton Sea. Our object was to ascertain what waterbirds were nesting on or about the Sea, and to secure specimens of birds, mammals and reptiles, all in the interests of the Museum of Vertebrate Zoology, at the University of California.

Mecca, where our base camp was located under a clump of cottonwoods by an artesian well, is a station (once called Walters) on the Southern Pacific about a mile west of the westernmost encroachment of Salton Sea. The railroad towards Yuma used to be a straight track eastward from Mecca past the now submerged site of the Salton salt works; but the rising water compelled the building of one and then a second new route out around the north margin of the Sea. The line of telegraph poles out into the water, successively deeper and deeper, until only the crosstree of the last one shows above the surface, marks the course of the old route.

From our camp at Mecca, we were compelled to carry our outfit down the railroad to the landing, a gravelly beach flanking the railroad which is protected from the waves by a tier of sand-bags. Our launch was unmoored from its berth in a half-submerged mesquite clump, and after the usual tinkering with the gasoline engine we were under way.

The boat had been christened the "Vinegaroon", which word Donham told us was the Mexican name for a curious "bug" (a Solpugid I judged from his description) whose movements are very quick and as rapid in one direction as in another. But we found that our craft could hardly bear out the analogy. Nine hours were occupied in covering the forty miles to our first objective point, Echo Island.

The first part of the voyage of the Vinegaroon over the Colorado Desert was thoroly enjoyable. There was a cool, gentle breeze from the east. On the north the bare rain-sculptured ridges of the Chocolate Mountains presented ever-changing shades of brown, which give them their name. On the south rose the eastern spurs of the Santa Rosa Mountains, a land of mystery to me then as regards its animal life; but later in the summer the scene of many weeks of field work. The western end of Salton Sea is very shallow, and over several square miles the water is dotted with protruding bushes; and here and there rows of cottonwoods, all dead, mark the site of former ranches. In passing one of these spots, our propeller caught in a section of chicken-wire fencing, which was buoyed nearly to the surface by an attached fence-post.

Fishes were plentiful—swarming by the hundreds along the railroad, where refuse was regularly thrown from the trains to them. There were carp, "bony-tail", or Colorado perch, and cat-fish. These formed a plentiful food-supply for the fish-eating birds. The partly submerged telegraph poles each served as a perch for from one to three cormorants; while Great Blue Herons were roosting on the bush tops. A good many ducks were seen in the brush tracts close to shore, but we found no evidence of their breeding.

As we cruised along, further out on the open sea, we came up with flocks of from 20 to 50 American Eared Grebes (*Colymbus californicus*). Fully fifteen such companies were encountered, their proximity being detected usually thru hearing their strange saw-filing calls. For the birds themselves were difficult to see at any distance on the water because of the glassy glare, this after the breeze began to die out. Donham steered us into some of the flocks, and we succeeded in shooting several of the grebes, tho as soon as alarmed they easily dove beyond the reach of the clumsy Vinegaroon. Six Western Grebes (*Aechmophorus occidentalis*) were encountered, five in a company, and one lonely one. But they all quickly disappeared, as soon as the wheezing launch started in their direction. I have no reason to believe that either the Eared or Western Grebe nest anywhere in the Salton Sea region. They were probably at this date about to leave for their more northern breeding grounds, the former nesting in numbers as far south at least as Bear Lake, in the San Bernardino Mountains, only 60 miles away but in a much higher life zone.

Fully a dozen Common Loons (*Gavia immer*) in full plumage were seen singly at a distance. And several Caspian Terns (*Sterna caspia*) flew by out of range. Cormorants (*Phalacrocorax auritus albociliatus*) kept flying curiously across our bow, and the three we dropped kept us busy the rest of the day's voyage scraping grease. About noon all vestige of a breeze vanished; the water became smooth and glary. We had no awning; and the desert sun beat down on our backs, leaving burns which constantly recalled the experience for a week afterward. Scraping grease from fishy seabirds on an open boat in the frying sun is one phase of collecting well worth avoiding—if one can.

All along our course a number of immature Ring-billed Gulls (*Larus delawarensis*) were repeatedly seen, evidently keeping us in view for the sake of the pieces of meat and fat we kept throwing overboard.

About one o'clock a curious shifting mirage made its appearance ahead, announcing the location of our first objective point. But it was not until three-thirty that we reached it.

Echo Island lies twelve miles or more south of the present station of Lano which is somewhere in the vicinity of the old station of Volcano, now submerged. As we neared the Island, a curious frosted patch became conspicuous on the

highest hill. This soon proved to be a great colony of American White Pelicans (*Pelecanus erythrorhynchos*) tho not a bird had been seen on the Sea, and only two or three scouts reconnoitered about our boat just before we made a landing in a sandy cove on the northeast side. As soon as possible I got out my camera and sneaked up onto the colony of pelicans. But they were wild, and began to fly by the time I was within 150 yards. I tried several snaps; but later developments showed these to have been improperly focused. So that only a series of pictures of the nests, two of which accompany this article, were obtained.

The sight of the great white birds rising in masses from their nesting grounds was exciting in the extreme; for I had never seen this species under such circumstances before. They wheeled in great circles overhead, crossing and re-crossing



PORTION OF WHITE PELICAN COLONY ON ECHO ISLAND, SALTON SEA; THIS COLONY
CONTAINED 980 NESTS WITH EGGS ON APRIL 20, 1908

over their breeding grounds, or glided out to sea in intersecting V's. When flapping, their wings gave out a loud swish, and the many at once produced a roar. But when sailing close overhead on motionless wings they made a whispering, whistling sound, as of the wind blowing thru the chinks of an old building. Occasionally a grunting quack was to be heard, but no other note was uttered.

We had discovered the southernmost recorded nesting-colony of the American White Pelican, and we set about taking a census of it, as accurately as possible. Three separate divisions of the colony were located: the first on the north prominence of the Island consisted of 44 nests, each containing one or two eggs; in a second division, in the saddle between the two hills and occupying a drift terrace at the

back edge of the beach, there were 236 nests; and in the largest division, that on the southern hill-top there were 700 nests containing eggs, not exactly, but approximately, for we got confused in one place. Thus there were 980 occupied nests, besides many others in process of construction. At the very minimum there were 2000 pelicans here assembled.

We collected five sets of two eggs each to save as specimens, a very modest representation from the standpoint of the old-fashioned egg-collector! But these few were recorded with great care, and photos of the nests secured. The eggs at this date (April 19) were largely either fresh, or incubated but slightly. One set was far advanced in incubation, but no hatched young were seen on this island. Probably on this account no freshly caught fish were to be seen about the nests,



TYPICAL NEST OF WHITE PELICAN FROM SOUTHERN HILLTOP OF ECHO ISLAND, SALTON SEA

tho several very large dried carp were noted, doubtless left over from last year's nesting time. A few dried-up young of last year were also seen. The usual number of eggs in a nest was two; several sets of three were seen, and one of four. (Donham later arranged a surprise for me, and I found a set of ten!)

The nests varied greatly in size and composition, according to location. A nest on the drift line just at highest water mark was a tall, steep-sided affair, like the pictures I have seen of flamingo's nests. Appropriate material was plentiful, consisting of sections of plant stems, chips and chunks of pumice. Planks and railroad ties sometimes interfered with the symmetry of the nests. The finer material had evidently been heaped up by the bird as she sat on the nest. For the nests were often surrounded by radiating spoke-like grooves, plainly bill marks.

The material is thus pulled towards the sitter, but not from a farther distance than 828 mm from the center, beyond which the bird is evidently not able to reach. The spacing of the nests in the colony, quite regular in places, seems to be dependent on the reach and conflicting interests of the inhabitants. The sets of eggs were never closer together than 828 mm, usually 1380 mm apart. The ground between the nests was usually absolutely clear of even the finer fragments, these having been scraped up onto the walls of the nests. On the upper hill-slopes, the nests were more scanty, for material was scarce. Some were made wholly of angular pumice or dried mud fragments, some of brush stems, and some of just soft earth. But their diameter was an almost constant quantity, between 414 and 532 mm. The depression was 46 to 69 mm deep, so that there was nearly always a well-defined rim to the nest. The higher nests, those in the drift, were mounds as much as 276 mm tall.

While gulls, cormorants and herons were seen in the vicinity, the pelicans were the only water birds nesting on Echo Island. As long as we remained on the Island, until late the next forenoon, the latter refused to return to their nests even in the night. They remained in large "rafts" on the water a mile or so off-shore.



WHITE PELICANS "RAFTING" OFF-SHORE NEAR ECHO ISLAND, SALTON
SEA, APRIL 19, 1908

Occasionally a party would fly past overhead. From one of these, two of the big birds were shot and Richardson and I skinned them out on the beach, using the fine pumice sand as an absorbent to very good advantage.

During the night a stiff breeze came up from the east, and before we were aroused, the boat beached broadside on. We were awakened by the pounding of the waves on her sides, and hurried out; but all our efforts failed to keep her from filling. The batteries were ruined, and our further explorations were curtailed. After the wind went down, and after a vast amount of bailing and heaving, we got the boat off the sand. But meanwhile we had enjoyed a prolonged bath in the tepid brackish waters of Salton Sea. Before noon we took leave of Echo Island, and bent to the oars heading for the station of Lano about north of us some 12 miles. Incidentally, without pulling much out of our way, we were able to land on Pelican Island, a small rocky ledge three miles from Echo Island.

Here we found a large breeding colony of Farallone Cormorants (*Phalacrocorax auritus albociliatus*). Long before we reached Pelican Island, cormorants kept flying past us towards it, each one carrying a stick or bark shred. As we landed hordes of birds left their nests or roosting places and circled about close over us. According to Donham this was formerly (that is two and three years ago) *the*

nesting grounds of the pelicans. But now we found but three pelican's nests on the Island, each containing two eggs. One set was just hatching, one of the escaping youngsters uttering a vigorous croak at measured intervals.

A census of cormorant's nests showed 147 containing eggs, besides many others partly built. The nests were tall, compact structures, composed altogether of angular shrub-trunks, and lined with mesquite bark-strips and old feathers. The outer basal sticks and the surrounding rocks were all white-washed with excrement. A typical nest was 414 mm high and 552 mm across, slightly saucered. The tendency seemed to be to locate the nests on prominent rock ledges or pinnacles. The number of eggs in a nest ranged from one to six, commonly four or five.



TYPICAL NEST OF FARALLONE CORMORANT, ON PELICAN ISLAND, SALTON SEA, APRIL 20, 1908

A number of Great Blue Herons had their headquarters on this Island. We took one specimen, showing this to be a pale form probably meriting the lately proposed name *Ardea herodias treganzai*. We found seven nests of this heron, each containing three or four eggs in which incubation varied from fresh to nearly complete. The nests were built on the rocks, usually on shelves beneath higher prominences. They were made of large crooked drift-worn brush stalks, with a few old weathered quill-feathers directly beneath the eggs. One set rested on the bare rock-surface and was kept from rolling off by a partial rim of straggling sticks on the lower side.

There were a number of gulls (*Larus delawarensis*) flying about the Island,

just out of sympathy for the cormorants and herons, I suppose. Four-fifths of the gulls were plainly immature, and the rest may have been non-breeders, too. I saw no sign of their nesting anywhere on the sea.

After collecting a few specimens and taking some pictures, we left the Island at three-thirty, and proceeded on our arduous way towards the mainland, which we reached at dark. We had to tie up to a bush several hundred yards off shore, because of the shallowness, and wade to shore with our effects. Richardson and I caught a train the next morning, and returned to Mecca, leaving Donham to take care of his boat.

In the preceding account I have mentioned only the water birds met with on Salton Sea. The land birds found in the vicinity of Mecca will receive attention in another paper.

Berkeley, California.

A FEW SUMMER BIRDS OF LAKE CHELAN, WASHINGTON

By J. H. BOWLES

LAKE Chelan is situated in the north central part of the State of Washington, and extends east and west almost entirely across the northern end of Chelan County. At the western end of the lake is its main feeder, the Stehekin River, which flows directly out of the Cascade Mountains. At the eastern end is its outlet, the Chelan River, which flows thru a deep gorge into the Columbia River. As the Chelan River is only four miles in length, the lake may be said to connect the Cascade Mountains with the sandy wastes of the Columbia. Consequently a great variety of country is encountered, as the lake is fifty-two miles in length and four or five miles in width. At the eastern end one finds almost the typical sage brush desert region, altho its altitude of 1500 feet has sprinkled it with what are commonly called bull pines (*Pinus jeffreyi*). At the western end the foothills of the mountains are encountered, and consequently an entire change of physical surroundings. Sand and sage brush have long since been left behind, and instead of scattered pines we find walls of rock and forests of cedar, pine, hemlock and cottonwood.

Such a country as is above described must necessarily attract a wide variety of bird life, and this is indeed the case to a really astonishing degree. At times I have almost imagined that a part of my old New England hunting grounds must have suddenly extended over the 3000 miles that intervene; for I have sat listening to the well-remembered songs and call-notes of Red-eyed Vireos, Catbirds, Kingbirds, Olive-backed Thrushes and Redstarts, all announcing their presence at the same time. Intermingled, and almost in discord, so out of place did they seem, would be heard the songs of the Louisiana Tanager and Bullock Oriole, as well as many other notes of our typical far western bird life.

I shall not attempt to give a full list of the birds of the region, merely mentioning such as seem to me to be of unusual interest for one reason or another, more particularly the typical forms common to the eastern United States.

The dates upon which these notes were taken cover the time from June 10 to the 23rd, of the present year (1908), at which period it seems beyond any reasonable doubt that all of the birds noted were breeding.

Querquedula cyanoptera. Cinnamon Teal. Two pairs of these little ducks were to be found at the extreme west end of the lake during my entire stay. Neither nest was found, altho both were certainly there. This is by far the highest altitude at which I have noted these birds nesting; but both pairs were probably strays from the Columbia River.

Cypseloides niger. Black Swift. These swifts were very common at the west end of the lake, and might be seen in flocks of fifty or more at almost any time of day. As the mountains were approached they rapidly became rare, until at an altitude of a little over 2000 feet they were very seldom seen at all. No evidences of nesting sites were found, nor could I obtain any reliable reports that any had ever been found.

Aeronautes melanoleucus. White-throated Swift. Less common than the foregoing, but seen going into crevices near the east end of the lake in the inaccessible cliffs along the Columbia. One has no conception whatever of the rapidity of bird flight until he has seen one of these winged meteors travelling at full speed.

Stellula calliope. Calliope Hummingbird. Found at both ends of the lake, but near the west end in the vicinity of 1500 feet altitude these birds were extremely numerous. I found great difficulty in locating the nests, only one set of two fresh eggs being found. This was taken on June 12, my attention being attracted to it by the savage attack of the female upon a passing Western Robin.

Nucifraga columbiana. Clarke Crow. These most interesting birds were rather plentiful near the west end of the lake, where they seemed to prefer an altitude of a little over 1500 feet. Here on June 13 I located the only nest of the trip, which was disclosed to me by the parent birds carrying food to the young. It was about 150 feet up in a large bull pine, near the top where some disease of the foliage had caused an almost solid cluster four feet in diameter. As regards visiting the nest the old birds were extremely shy, never going to it if they knew I was in the vicinity. This was apparently not at all to the liking of the young ones, whose continuous cries of *charr* could be plainly heard from the ground. They sounded very much like half-grown crows. My presence did not seem to cause the adults any personal alarm whatever, and I spent considerable time watching them at only a few yards distance. They seemed to find an equal abundance of food in the trees and on the ground, but I was surprised to find them such expert and assiduous fly-catchers. Large beetles and a dull-colored miller were very abundant, and these the nutcrackers caught in mid-air with a speed and accuracy that was remarkable in such heavily built birds. It is probable that the above mentioned nesting record is most unusual, both as to date and altitude, for doubtless they usually nest much earlier in the season and higher up in the mountains.

Hesperiphona vespertina montana. Western Evening Grosbeak. While not precisely common, these handsome birds were to be seen every day in the vicinity of 2000 feet altitude. No nests were found, nor did the birds show any indications of nesting.

Spizella socialis arizonæ. Western Chipping Sparrow. This extremely common little bird deserves mention for the almost unlimited latitude of its distribution. It is to be found literally everywhere, rearing its young in the sun-baked sage bushes, the cool orchard trees of some irrigated garden, and again is found equally numerous on the fir-clad slopes of the mountains. Many a disappointment has met me at the end of a hard climb, only to find a sparrow's nest where I had hoped for some rare warbler. And this in the wildest mountains where the presence of a *socialis* seemed quite beyond belief.

Vireo olivaceus. Red-eyed Vireo. Not at all uncommon at both ends of the lake. This is the most abundant vireo of the region, outnumbering the Cassin (*Vireo s. cassinii*) in the lower foothills at the west, and the Western Warbler (*V. g. swainsonii*) at the eastern end of the lake. Their song sounded to me to be rather more spirited than that of the Red-eyes of my eastern coverts, but possibly a long association with *cassinii* may have warped my judgment.

Dendroica townsendi. Townsend Warbler. This handsome warbler was found only at the west end of the lake where it was by no means common and seemed to be confined mostly to the tallest trees. The only males seen or heard were all high up in the tops of the largest conifers, much as is the habit of the Hermit Warbler on the Pacific slope.

In the only two nests seen, both of June 20, I was so unfortunate as to find in each four newly hatched young. They were both placed about twelve feet up in small firs, one some five feet out on a limb, the other close against the main trunk. Both were saddled upon the limb, and not placed in a fork nor in a crotch.

The construction of both nests was identical, and entirely different from any of the descriptions that I have read. They were firmly built, rather bulky, and decidedly shallow for the nest of a warbler. The material used appeared to be mostly cedar bark, with a few slender fir twigs interwoven. Externally they were patched with a silvery flax-like plant fiber, while the lining seemed to be entirely of the stems of moss flowers. To an eastern collector it resembled an unusually bulky and considerably flattened nest of the Black-throated Green Warbler, lacking any signs of feathers, however, in its construction.

Both females remained on the nests until I was within a very short distance of them, then dropped straight to the ground and disappeared. They were extremely shy at first, but after an hour or two became sufficiently accustomed to my presence to return to the nests a few moments after being flushed. I did not hear any alarm notes, nor did the males appear at any time.

Setophaga ruticilla. American Redstart. Altho seen at both ends of the lake the Redstarts were not at all common, being very much less numerous than they are in the vicinity of Spokane, Washington. They haunted the alder thickets in the immediate vicinity of water, and were seen as high as 2000 feet altitude.

Galeoscoptes carolinensis. Catbird. The Catbirds could not be termed common, but wherever a good-sized tract of open, brushy land was to be found one was fairly certain to hear the delightful notes of this bird. Well up into the mountains the occasional clearings were sometimes tenanted by a pair of these birds, and a short search usually revealed the nest and eggs, the latter being invariably five in number.

Hylocichla ustulata swainsonii. Olive-backed Thrush. These birds divided honors with the Western Chipping Sparrows as to which should be the more numerous in the wooded country. They seem the latest to nest of all the birds in the altitudes below 4000 feet; for at the time of my departure on June 23 many nests were incomplete, while none of the nests found contained young. The song seemed to me considerably clearer than that of our Russet-backs on the Pacific slope; otherwise there was not much difference in their notes or habits.

Tacoma, Washington.

AN UNUSUAL NESTING LOCALITY FOR THE ROCKY MOUNTAIN NUTHATCH

By GEORGE RICHARDS

WITH TWO PHOTOS BY THE AUTHOR

ALTHO but an amateur, I have like most other students my own idea concerning the habits of certain birds. Having worked among the birds a few years and found several nests of the Long-tailed Chickadee at an altitude of less than 5500 feet, I thought nothing of them except as interesting nests, like those of the other common birds. But when I became acquainted with a more experienced bird student, and told him of these nests, he greatly doubted my identification, until this spring when he saw the nests and the birds and satisfied himself as to their identity.

I had come to the conclusion that, as the location was but ten miles from the eastern base of the Rocky Mountains and streams thickly bordered with cotton-



ROCKY MOUNTAIN NUTHATCH AT ENTRANCE TO NEST-CAVITY

woods and willows flowed from the canyons, the breeding birds from higher altitudes sometimes followed the streams a short way out on the plains and nested there.

Therefore I was both pleased and surprised when my brother returned home, May 14, 1908, with the news of having found a nest of the Rocky Mountain Nuthatch (*Sitta carolinensis nelsoni*). But again the practiced bird student was skeptical and immediately asked "to be shown."

When my brother first found the nest he declared that he

saw both birds, male and female, carrying something into the hole which appeared to be nesting material. The nest was visited the 15th, but nothing was determined as to whether there were eggs or not. Thinking it too early for eggs, the nest was not revisited for several days. Armed with a keyhole saw and cameras, our next trip was made May 22nd and to my joy, and the astonishment and dismay of the egg collectors our ears were greeted with the squeaking of hungry babes. Judging from the size of the youngsters on this date they were undoubtedly hatched when the nest was first found, and what was thought to be nesting material was in reality food for the young.

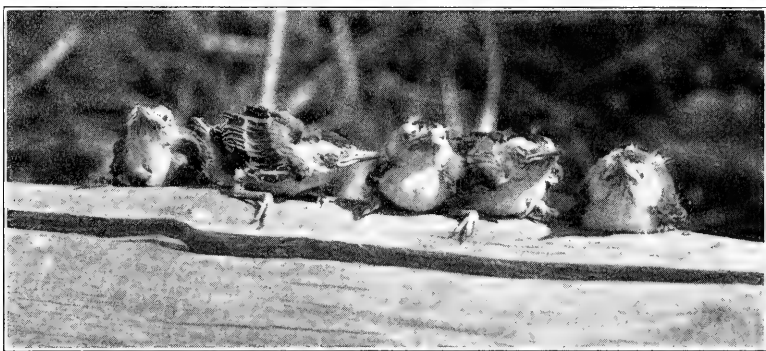
There was only the female to be seen now. Where the male had gone was hard to tell. The female was as tame as a chickadee, coming and going and feeding her young, with the writer standing only a foot or so distant. She worked incessantly, passing from nest to tree trunk, and, finding suitable food, at once returning. She usually brought millers, which were common at that time of the year. By actual count she visited the nest twenty-seven times in one hour,

each time bringing food of some kind, at least twenty of which were millers. Only once or twice out of the twenty-seven times did she appear to feed the young by regurgitation.

Usually when alighting upon the home tree she uttered a rolling note—"cră, cră, cră"—rapidly repeated, and instantly several wide open mouths appeared at the entrance of the nest cavity, each begging for the expected morsel.

A day or two later the young were taken from the nest to be photographed. Instead of being interested in posing before the magic camera, they seemed more inclined to hide their faces in the underbrush. Perhaps they were ashamed because of not being thoroly dressed. There were five young and a dead bird in the nest.

On attempting to place them on a vertical tree trunk they either could not or would not (perhaps both) cling to the tree as their parents do. The young were replaced in the nest and upon our return two days later we found they had flown. The nest was chiefly composed of fine rabbit hair, placed in a cavity of irregular shape and about six inches deep, in a scrubby willow about six feet from the ground. The surrounding country was open wooded pasture, but the ground immediately surrounding the tree was slightly swampy. This nest was located on



BROOD OF YOUNG ROCKY MOUNTAIN NUTHATCHES

the south branch of the Platte River near Littleton, and about ten miles south of Denver, Colorado, at an elevation of about 5370 feet.

[NOTE.—The above observations of Mr. Richards demonstrate an important fact in a rather unusual faunal condition existing along the South Platte River for several miles below the point where it issues from the mountains.

This river which is the main stream draining a large portion of the mountainous central part of the State, flows thru a deep canyon for many miles before it reaches the plains region, and from the mouth of the canyon for a distance of fully fifteen miles out into a typical prairie (Upper Sonoran) country there is a distinct sprinkling of mountain and foothill forms, both animal and vegetable. Thus, beside the two typically mountain birds mentioned above, the Broad-tailed Hummingbird, Lewis Woodpecker, and Violet-green Swallow nest here, at an altitude fully 1500 feet below what is ordinarily considered the lower limit of their breeding range.

Among the mammals, the beaver is very abundant, even to the very limits of the City of Denver; the Busy Chipmunk (*E. a. operarius*) is common, fully 1100 feet lower than the lowest records; while bobcats (probably *L. uinta*) are more or less common during the winter; and a few deer have been seen well out onto the prairie.

This peculiar condition so far as I can ascertain does not exist on any of the other streams flowing from the mountains out onto the plains, and its cause can only be accurately ascertained by an exhaustive study of the vegetation, climate, and other conditions upon which faunal distribution depends.—R. B. ROCKWELL.]
Denver, Colorado.

NOTES FROM BUENA VISTA LAKE, MAY 20 TO JUNE 16, 1907

By C. B. LINTON

BUENA Vista Lake is about thirty miles southwest of Bakersfield, Kern County, California; it is twelve miles long by eight miles wide and very shallow. There is no vegetation along the southern and western shores excepting here and there a patch of salt or devil-grass; on the north for several miles is a stretch of alkaline desert with an occasional patch of mesquite and sage. At the northeast corner where the Kern River empties into the lake (and where is also the outlet, the mouth of the Kern River and the Lake outlet being separated only by a narrow levee) is found an abundant growth of tules and willows, the latter bordering the Kern River in dense thickets and groves for miles. About two and one-half miles from the lake, along the river, is quite an extensive marsh caused by the overflow of the river during the winter months. It is near this marsh and in the vicinity of the mouth of the river that all collecting was done, small canoes being used for transportation.

In the limited time at my disposal here, very little could be done, the field being a little too large for one man to work in so short a time.

***Aechmophorus occidentalis*.** Western Grebe. Common on the lake. Would undoubtedly have bred, had not the plume hunters been present.

***Podilymbus podiceps*.** Pied-billed Grebe. Fairly common in the lake and river marshes. Breeding.

***Larus californicus*.** California Gull. Several immature Gulls were seen about the lake, probably this species.

***Sterna caspia*.** Caspian Tern. Two seen. One secured, May 26, in Kern River marsh.

***Sterna forsteri*.** Forster Tern. Fairly common near breeding colony of Black Terns. None found breeding.

***Hydrochelidon nigra surinamensis*.** American Black Tern. Large colony nesting in river marsh.

***Phalacrocorax auritus albociliatus*.** Farallone Cormorant. Breeding in immense numbers in the partly submerged willow trees in the lake; two to six nests to the tree was the rule. Fully fledged young and fresh eggs were found in late May.

***Pelecanus erythrorhynchos*.** American White Pelican. Two large colonies were visited; one of about 250 nests, on a small sandy island in the river mouth; the other of perhaps 500 nests, on the lake shore. The nests of the latter colony were mostly well constructed of tules and marsh grass covering about two acres. The nests on the island were merely holes scooped in the sand.

***Nettion carolinense*.** Green-winged Teal. Several seen.

***Querquedula cyanoptera*.** Cinnamon Teal. Fairly common. Breeding. Fresh sets and young noted in late May.

Dafila acuta. Pintail. Fairly common. Breeding. Several broods just out of the nest noted. One fresh set of six eggs found June 2. One brood of 9 hatched June 4.

Aythya americana. Redhead. Reported breeding by market hunters.

Erismatura jamaicensis. Ruddy Duck. Several seen.

Plegadis guarauna. White-faced Glossy Ibis. One single bird seen May 25. Flock of about 75 seen flying over camp June 4.

Botaurus lentiginosus. American Bittern. Fairly common.

Ardetta exilis. Least Bittern. One seen.

Ardea herodias. Great Blue Heron. Abundant. Colony nesting in sycamores, ten miles from lake.

Ardea egretta. Egret. Pair seen in river marsh, feeding.

Ardea candidissima. Snowy Heron. Seen flying over camp.

Ardea virescens anthonyi. Anthony Green Heron. Rare in May, becoming common by June 15. Reproductive organs showed nesting must have commenced in early June.

Nycticorax nycticorax naevius. Black-crowned Night Heron. Abundant. Nesting in thousands in the cormorant rookery, both herons and cormorants sometimes occupying the same tree.

Porzana carolina. Carolina Rail. One specimen secured.

Fulica americana. American Coot. Abundant. Breeding.

Recurvirostra americana. American Avocet. Fairly common. Several small colonies nesting on the lake shore.

Himantopus mexicanus. Black-necked Stilt. Thousands seen. Several colonies nesting on river and lake marshes.

Pisobia minutilla. Least Sandpiper. Two specimens secured June 4. They were feeding on small island with several Snowy Plovers.

Actitis macularia. Spotted Sandpiper. Several seen.

Oxyechus vociferus. Killdeer. Fairly common. Breeding.

*Aegialitis nivos*a. Snowy Plover. Several seen. One set of two fresh eggs found June 2, on a tiny island near lake shore. On this same island several sets of Avocets and one set of 6 fresh eggs of *Dafila acuta* were found.

Zenaidura macroura carolinensis. Mourning Dove. Fairly common.

Gymnogyps californianus. California Vulture. Reported breeding in the mountains near lake.

Cathartes aura septentrionalis. Turkey Vulture. Occasionally seen.

Circus hudsonius. Marsh Hawk. Rare. Breeding.

Buteo borealis calurus. Western Red-tail. Several seen. One specimen secured.

Buteo lineatus elegans. Red-bellied Hawk. Fairly common in the willows along the river. One specimen secured.

Falco sparverius phalæna. Desert Sparrow Hawk. Several seen.

Aluco pratincola. American Barn Owl. Seen.

Asio wilsonianus. Long-eared Owl. One seen in dense mesquite near lake.

Bubo virginianus pacificus. Pacific Horned Owl. Often heard. One specimen secured.

Speotyto conicularia hypogæa. Burrowing Owl. Not common.

Geococcyx californianus. Road-runner. Fairly common. Breeding.

Coccyzus americanus occidentalis. California Cuckoo. Fairly common. Breeding.

Colaptes cafer collaris. Red-shafted Flicker. Common. Breeding.

Dryobates nuttallii. Nuttall Woodpecker. Common. Breeding. Fully fledged juveniles secured in late May.

Tyrannus verticalis. Arkansas Kingbird. Abundant. Breeding.

Myiarchus cinerascens. Ash-throated Flycatcher. Common. Breeding.

Sayornis saya. Say Phoebe. Several seen.

Sayornis nigricans. Black Phoebe. Fairly common. Breeding.

Empidonax traillii. Traill Flycatcher. Common. Breeding.

Corvus brachyrhynchos hesperis. Western Crow. Common. Breeds in the willows along Kern River.

Molothrus (sp.?) Cowbird. An egg of some variety of the cowbird was found in each of several Least Vireo nests secured.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Fairly common.

Agelaius tricolor. Tricolored Blackbird. Colony breeding.

Sturnella neglecta. Western Meadow Lark. Common.

Icterus bullocki. Bullock Oriole. Abundant. Breeding.

Euphagus cyanocephalus. Brewer Blackbird. Observed.

Carpodacus mexicanus frontalis. House Finch. Not common.

Astragalinus psaltria. Arkansas Goldfinch. Several seen.

Passer domesticus. English Sparrow. Common in the streets of Bakersfield.

Chondestes grammacus strigatus. Western Lark Sparrow. Fairly common.

Melospiza melodia heermanni. Heerman Song Sparrow. Common. Breeding.

Pipilo maculatus megalonyx. Spurred Towhee. Fairly common. Breeding.

Guiraca cærulea lazula. Western Blue Grosbeak. Fairly common. Breeding.

Petrochelidon lunifrons. Cliff Swallow. Several seen.

Tachycineta bicolor. Tree Swallow. Fairly common. Breeding.

Lanius ludovicianus gambeli. California Shrike. Fairly common. Breeding.

Vireo bellii pusillus. Least Vireo. Common. Breeding in the willow thickets along the river. Fresh sets and young birds found June 1st.

Dendroica æstiva brewsteri. California Yellow Warbler. Common. Breeding.

Icteria virens longicauda. Long-tailed chat. Common. Breeding.

Mimus polyglottos leucopterus. Western Mockingbird. Not common.

Toxostoma redivivum. California Thrasher. Fairly common. Breeding.

Thryomanes bewickii spilurus. Vigors Wren. Fairly common. Breeding.

Sialia mexicana occidentalis. Western Bluebird. Common. Breeding.

Long Beach, California.

A FAMILY OF YOUNG DUCK HAWKS

By JOSEPH DIXON

WITH TWO PHOTOS BY ANNIE M. ALEXANDER

ON June 16, 1907, we took three motherless, downy young Duck Hawks from their nest at Danger Point, near Killisnoo, Admiralty Island, Alaska. Even at this time they showed a noticeable difference in size. The largest one was just getting his eyes opened and began soon to take notice of the things going on about him. On June 19 the three weighed five and one-half, six and seven ounces.

The largest one was evidently from the first egg hatched and was always three

or four days ahead of the smallest in strength, weight and wit. This large one was inclined to seize everything he could when it came meal time; in fact each one was always ready to grab anything he could out of the mouths of the others.

I gave them plenty to eat and most of their time was spent in sleeping and eating, so they grew amazingly. In five days they almost doubled in weight, having reached nine, eleven and one-half and twelve ounces, respectively. During the month following, they traveled several hundred miles on board the launch, but a rough sea seemed only to improve their appetites.

They were not particular as to their food as long as it was fresh meat, except that they preferred bird bodies to mice. On June 30 they weighed twelve, eighteen and twenty ounces. They had tremendous appetites and could eat almost their own weight of meat every day. At this time the largest one began to develop a few dark pin feathers and one day he discovered what his feet were made for.

On July 6 the hawks weighed twenty, twenty-three and twenty-five ounces each. The largest one was now learning to flop his wings and hop down the hill,



BROOD OF YOUNG DUCK HAWKS TAKEN FROM NEST NEAR KILLISNOO, ALASKA, JUNE 16, 1907

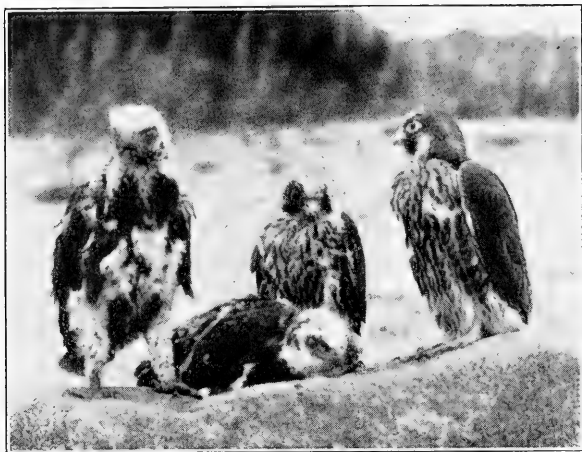
and once he uttered a genuine duck hawk cry. From this time they did not increase much in weight but went mostly to feathers.

A few days previous to this the middle-sized one became listless and refused to eat. This indicated that there must be something radically wrong with him, as his appetite had been the biggest thing about the bird. As time went on he grew worse instead of better and would just stand around and squall most of the time, still refusing food. Even two large doses of castor oil did not seem to improve his condition. On the eighth of the month I decided that it would be more merciful to kill the bird than to permit it to starve to death. A post mortem revealed the cause of the trouble. Its stomach was distended to the utmost capacity with hair, shot, moss, and other foreign substances of such a nature that they would not form pellets that could be thrown up.

I was away from camp for a week soon after this and upon my return could scarcely believe that such a change could have been wrought in so short a time. Instead of a frayed-out, half fuzzy, half feathered bird, the largest duck hawk was now a beautiful falcon with clean bright plumage and a general clear-cut neat ap-

pearance. The little one seemed ashamed of its juvenile clothes and could be seen sitting on the tent pulling out the old fuzzy feathers as fast as it could. It would grab a piece of down, brace itself and give a hard yank and out came the feather.

By this time the hawks began to hop around on the boxes and liked to sit on top of the tent when the sun was shining. They were very sociable and would come into the tent when allowed to do so, and showed much interest in the work



YOUNG ROUGH-LEGGED AND DUCK (TWO AT RIGHT) HAWKS,
PHOTOGRAPHED JULY 12, 1907

being carried on, showing especial interest in the bird bodies. Often they would find a roll of cotton or some other soft warm place and nestle down and go to sleep.

On July 21 the larger bird weighed twenty-six ounces and the smaller one twenty-five ounces. They seemed to have reached almost their full size and the large one began to fly on this date. He was particularly "sassy" and was ready to fight anything at any time.

As the birds were sitting on top of the tent a crow came "cawing" over them. They

both let out a defiant duck hawk war cry and did not seem to be in the least afraid. The smaller one died a few days later and from that time on I heard the older one utter the duck hawk yell only once. He seemed to miss his mate very much and spent most of the time gazing wistfully up into the blue.

On July 23, or practically six weeks after they hatched, the oldest duck hawk was able to fly and after that I had to keep him tied to a long piece of fish line to keep him from flying away altogether.

Palo Alto, California.

SUMMER BIRDS OF THE TULARE LAKE REGION

By E. A. GOLDMAN

THE Tulare Lake region occupies a depression along the western side of the southern part of the San Joaquin Valley in California. Besides Tulare Lake it may be understood to include the marshy areas from Summit Lake on the north to Kern Lake and Buena Vista Lake on the south. Summit Lake, perhaps less known than the others, is a small sheet of open water in the delta of Kings River, hemmed in by floating masses of peat and wooded islands. The sluggish currents of various sloughs carry the river waters away in two directions—northward to the San Joaquin River and southward to Tulare Lake.

In the course of field work for the Biological Survey the writer visited the region in the early summer of 1907, remaining from June 18 to July 12. Small collections of birds were made at Summit Lake, at various points along the northern

and western shores of Tulare Lake from east of the mouth of Kings River to the mouth of Kern River, along Buena Vista Slough and at Buena Vista Lake. Special attention was given to breeding water birds, but the land species were not entirely neglected.

Successive years of drought had been followed by two very wet seasons, and at the time of my visit Tulare Lake was higher than for many years. The lake waters in spreading had moistened or partially submerged thousands of acres of land on which a rank new growth of tules and coarse grasses was springing up, affording unusually favorable breeding grounds for birds. Yet few species were nesting in abundance. In the vicinity of Summit Lake local conditions seemed suitable, but water birds were surprisingly scarce. This lake was a place of unexpected natural beauty, its floating peat islands and gracefully overhanging banks of bright green foliage contrasting strongly with the summer aridity of the neighboring San Joaquin plains.

The specimens obtained are in the Biological Survey Collection, and have been identified by Mr. H. C. Oberholser.

The nesting of the Green-winged Teal (*Nettion carolinense*) in California has been already noticed.^a

Among other birds in the following list whose known breeding ranges were materially extended are *Toxostoma lecontei*, and *Amphispiza nevadensis canescens*.

***Aechmophorus occidentalis*.** Western Grebe. Several were seen in Tulare Lake, near the mouth of Kings River, June 18-23.

***Podilymbus podiceps*.** Pied-billed Grebe. Common along the shores of Tulare Lake; noted in Summit Lake, Buena Vista Lake, and in numerous sloughs. A number of nests were found floating in water about two feet deep, among thin tules near the mouth of Kings River, June 18-24; some contained hatching eggs and others had been already abandoned.

***Sterna forsteri*.** Forster Tern. Common in flocks near the mouth of Kings River, at the north end of Tulare Lake, June 18-24. Two specimens procured were not breeding.

***Hydrochelidon nigra surinamensis*.** Black Tern. A few solitary birds were seen at various points along the north and west shores of Tulare Lake, June 18 to July 7. A female specimen obtained June 23 was in breeding condition.

***Phalacrocorax auritus albociliatus*.** Farallone Cormorant. A large rookery was found in the mouth of Kings River, at the north end of Tulare Lake, June 19. Hundreds of nests in willows, standing in the water, contained young birds most of which were one-half to two-thirds grown. One adult specimen, June 23rd.

***Pelecanus erythrorhynchos*.** White Pelican. Large, loose flocks were seen daily while along the north and west shores of Tulare Lake, June 18-24 and July 6-8. A man who was gathering drifting lumber reported finding a nest containing eggs, on a small island near the west shore, about June 25.

***Anas platyrhynchos*.** Mallard. Breeds in small numbers. At the time of my visit the birds were apparently thru nesting. Large-sized young were swimming or flying about. Specimens were obtained at Summit Lake, June 26, and on the west side of Tulare Lake, July 7.

***Nettion carolinense*.** Green-winged Teal. A few were breeding along the west shore of Tulare Lake, July 7. A brooding bird was shot as she rose from a nest containing seven fresh eggs. Several other females were seen with recently

^a See CONDOR, Vol. X, No. 3, May-June, 1908, p. 129.

hatched young already in the water. A female and a downy young were secured as specimens.

Querquedula cyanoptera. Cinnamon Teal. After the pintail this species was next in abundance among the breeding ducks about Tulare Lake, and was noted at intervals along the sloughs south to Buena Vista Lake. Apparently all were thru nesting by June 18, and on and after that date numerous parties of five or six consisting of the adult female and brood of young were seen. Many of the young were already nearly full-grown. The adult males were more shy and usually kept out of sight. Several specimens, females and young, from Tulare Lake.

Spatula clypeata. Shoveller. A specimen was obtained and others with small young were seen at the north end of Tulare Lake, June 18-24.

Dafila acuta. Pintail. By far the most abundant breeding duck thruout the region. A female shot June 21 at the north end of Tulare Lake contained an egg about ready to lay; on the same date several adults with young large enough to make short flights were seen.

Marila americana. Redhead. A pair was seen at the north end of Tulare Lake, June 19.

Erismatura jamaicensis. Ruddy Duck. Several females with small young were observed along the north shore of Tulare Lake, June 18-24, and along the west side of the Lake, July 7; two specimens, an adult female and small young.

Dendrocygna bicolor. Fulvous Tree-duck. A pair was seen flying along the north shore of Tulare Lake, June 23. At Summit Lake one of a pair which flew over the boat was killed, June 27; it proved to be a male in breeding condition.

Plegadis guarauna. White-faced Glossy Ibis. Pairs and small flocks were observed occasionally from Summit Lake to Buena Vista Lake. A specimen was not in breeding condition.

Botaurus lentiginosus. Bittern. Solitary birds were noted at intervals, in marshes from Summit Lake to Buena Vista Lake.

Ardea herodias. Great Blue Heron. One or more were seen nearly every day while in the Tulare Lake region. Said to nest in the valley oaks (*Quercus lobata*) a few miles southeast of Summit Lake.

Herodias egretta. Egret. Not very abundant; noted at intervals from Summit Lake to Buena Vista Lake.

Butorides virescens anthonyi. Anthony Green Heron. Common thruout the Tulare Lake region. A few nests containing young about ready to fly were found in half-submerged willows near the mouth of Kings River, June 22.

Nycticorax nycticorax naevius. Black-crowned Night Heron. Abundant everywhere in the marshes from Summit Lake to Buena Vista Lake. Breeds in considerable numbers among the willows near the mouth of Kings River. Numerous old nests were seen, and a few still contained young birds about ready to fly, June 22; one specimen, Tulare Lake, June 23.

Grus mexicana. Sandhill Crane. Three only were seen in the marshy land at the south end of Tulare Lake, July 8.

Rallus virginianus. Virginia Rail. This species was met with only along the marshy bottom of the Arroyo Los Gatos, northwest of Tulare Lake; one was shot and several others heard, July 1.

Fulica americana. Mud-hen; Coot. A moderately abundant breeder thruout the Lake region. Numerous floating nests were found among tules along the north shore of Tulare Lake, June 18-24; some contained fresh or hatching eggs, and many

others were already abandoned. Young of various sizes up to half-grown were swimming about, some accompanied by a parent bird and others by themselves.

***Steganopus tricolor*.** Wilson Phalarope. One was shot on the west shore of Tulare Lake as it flew in company with a flock.

***Recurvirostra americana*.** Avocet. Abundant thruout the Lake region. Often seen in large, loose flocks between June 18 and July 12; one shot near the mouth of Kern River was in breeding condition, July 8.

***Himantopus mexicanus*.** Black-necked Stilt. Very abundant along the shores of Tulare Lake. Nesting at the mouth of Kings River, June 23, and along the west shore of the Lake, July 7; on the latter date most of the birds were still flying about in large, loose flocks; one specimen, June 23.

***Macrorhamphus scolopaceus*.** Long-billed Dowitcher. Several small flocks were flying along the southwestern shore of Tulare Lake, July 8; specimens obtained showed no signs of breeding.

***Ereunetes mauri*.** Western Sandpiper. Large, close-flying flocks were noted, and specimens taken, along the west shore of Tulare Lake, July 7-8.

***Numenius americanus*.** Long-billed Curlew. A few were seen near the mouth of Kings River, June 18-24; not noted elsewhere.

***Oxyechus vociferus*.** Killdeer. Common near water thruout the region.

***Lophortyx californicus vallicola*.** Valley Quail. Occurs wherever there is suitable cover. A few were seen at Summit Lake, along the west side of Tulare Lake, and at Buena Vista Lake. The species is more abundant in the foothill region bordering the San Joaquin Valley.

***Zenaidura macroura carolinensis*.** Mourning Dove. Abundant thruout the area covered; still breeding as late as July 30.

***Cathartes aura septentrionalis*.** Turkey Vulture. Seen occasionally.

***Circus hudsonius*.** Marsh Hawk. One only was seen near Summit Lake June 26.

***Buteo borealis calurus*.** Western Red-tail. Not uncommon thruout the region; one specimen from Stanley, northwest of Tulare Lake, June 30.

***Falco sparverius phalœna*.** Sparrow Hawk. Common.

***Aluco pratincola*.** Barn Owl. Common. Several were seen in woods at Summit Lake, and Buena Vista Lake, and in holes along the steep banks of arroyos near the west shore of Tulare Lake.

***Asio wilsonianus*.** Long-eared Owl. Several were met with in a heavy growth of large willows near the mouth of Kings River; one specimen.

***Otus asio bendirei*.** California Screech Owl. One specimen was taken in thin woods on the Arroyo Los Gatos, northwest of Tulare Lake, June 30. One other was seen, and others were heard at Summit Lake and Buena Vista Lake.

***Bubo virginianus pacificus*.** Pacific Horned Owl. Heard during nights at Summit Lake and Buena Vista Lake; one specimen—a young bird about two-thirds grown from Summit Lake.

***Speotyto cunicularia hypogæa*.** Burrowing Owl. Abundant.

***Geococcyx californianus*.** Road-runner. Noted occasionally; more abundant in the foothill region.

***Coccyzus americanus occidentalis*.** California Cuckoo. Rather common in willow thickets from Summit Lake to Buena Vista Lake; one specimen.

***Dryobates pubescens turati*.** Willow Woodpecker. Common among willows at Summit Lake; one specimen, breeding at the north end of Tulare Lake, June 20.

***Colaptes cafer collaris*.** Red-shafted Flicker. Rather common in willow woods

at Summit Lake, June 26, the north end of Tulare Lake, June 18-24, and on Buena Vista Lake, July 11-12.

Chordeiles acutipennis texensis. Texas Nighthawk. Common. Nesting near the mouth of Kern River Canyon, east of the Tulare Lake region, July 17.

Tyrannus verticalis. Arkansas Kingbird. Generally distributed and breeding in abundance.

Myiarchus cinerascens. Ash-throated Flycatcher. A few were nesting among the willows at Summit Lake, June 25. Noted at Buena Vista Lake, July 11; one specimen from Summit Lake, June 25.

Sayornis nigricans. Black Phoebe. Seen occasionally all thru the Lake region; most numerous along sloughs bordered by willows.

Empidonax traillii. Traill Flycatcher. Rather common in willow thickets and tule marshes.

Otocoris alpestris actia? Mexican Horned Lark. Horned larks, probably this form, breed in abundance.

Pica nuttalli. Yellow-billed Magpie. Noted only among the valley oaks (*Quercus lobata*) near Summit Lake where a few were nesting, June 25; one specimen.

Aphelocoma californica. California Jay. Not uncommon among the willows at the mouth of Kings River, June 22, at Summit Lake, June 25, and at Buena Vista Lake, July 11.

Corvus corax sinuatus. Raven. At least two were seen near the Arroyo Los Gatos, northwest of Tulare Lake, June 30.

Corvus brachyrhynchos hesperis. California Crow. Common in willow woods at Summit Lake, at the north end of Tulare Lake, and at Buena Vista Lake. Breeding at the north end of Tulare Lake, June 18; one specimen.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Several small flocks of females were seen in the tule marshes at the north end of Tulare Lake, June 18-24, and a lone male in breeding condition was shot there June 21. A few females were in the marshes at Buena Vista Lake, July 11.

Agelaius gubernator californicus. Bicolored Blackbird. Abundant in loose flocks thruout the Lake region. Apparently thru breeding when specimens, including large young, were taken at the north end of Tulare Lake, June 18-24.

Agelaius phoeniceus neutralis. San Diego Redwing. Three specimens from the north end of Tulare Lake, June 20-23.

Sturnella neglecta. Western Meadowlark. Abundant and generally distributed.

Icterus bullocki? Bullock Oriole. Orioles, probably this species, were seen several times among willows in the Lake region, but were too far away for positive identification.

Carpodacus mexicanus frontalis. House Finch. Common among willows in the Lake country, and about houses on the open plains. Breeding at the north end of Tulare Lake, June 23; one specimen.

Astragalinus tristis salicamans. Willow Goldfinch. Several small flocks were seen at the north end of Tulare Lake, June 18-24, and at Buena Vista Lake, July 11. A June specimen was not breeding.

Chondestes grammacus strigatus. Western Lark Sparrow. Not very common. A few were seen on the Arroyo Los Gatos, northwest of Tulare Lake, June 30, and along the west side of Tulare Lake, July 7. The species breeds much more abundantly in the Sierra foothills east of the San Joaquin Valley.

Amphispiza nevadensis canescens. California Sage Sparrow. A nearly full-

grown young was taken and several others seen in chaparral along the west side of Tulare Lake, July 7-8. Not previously recorded breeding in the San Joaquin Valley.

Melospiza cinerea heermanni. Heermann Song Sparrow. Abundant. Nesting in willows and among tules. Collected at the north end of Tulare Lake.

Pipilo maculatus montanus. Spurred Towhee. Breeding in small numbers at the north end of Tulare Lake, June 20 (specimen taken); a pair was seen in a thicket at Buena Vista Lake, July 11.

Guiraca caerulea lazula. Western Blue Grosbeak. Not very common, but generally distributed; one specimen.

Hirundo erythrogaster. Barn Swallow. Seen occasionally in the marsh country.

Iridoprocne bicolor. Tree Swallow. A few were nesting in holes in tall willow trees at Summit Lake, June 26; noted at Buena Vista Lake, July 11; one specimen from Summit Lake.

Lanius ludovicianus gambeli. California Shrike. Rather common and generally distributed.

Vireo bellii pusillus. Least Vireo. Very common and in full song, among willows bordering marshes and streams from Summit Lake to Buena Vista Lake; one specimen from Arroyo Los Gatos, northwest of Tulare Lake, July 8.

Dendroica aestiva brewsteri. California Yellow Warbler. A common breeding species among the willows near the mouth of Kings River, June 18-24; noted at Summit Lake, June 27, and at Buena Vista Lake, July 12; one specimen from Tulare Lake, June 20.

Geothlypis trichas arizela. Pacific Yellowthroat. One specimen breeding, from among tules along the north shore of Tulare Lake, June 20th.

Icteria virens longicauda. Long-tailed Chat. Common among willows at Buena Vista Lake, July 11th.

Mimus polyglottos leucopterus. Western Mockingbird. Not common. Two seen along the west side of Tulare Lake, July 8th.

Toxostoma redivivum. California Thrasher. Common among the chaparral along the Arroyo Los Gatos, northwest of Tulare Lake, June 29th to July 1st; a few seen in thickets at Buena Vista Lake, July 11. At Arroyo Los Gatos the birds were apparently thru nesting; the adults were in very ragged plumage, and the young nearly full grown.

Toxostoma lecontei. Leconte Thrasher. Met with among chaparral from near Huron west to the Arroyo Los Gatos, northwest of Tulare Lake. Between these points several family parties were seen, and specimens collected, June 29 to July 1. The old birds were in worn plumage; the young were nearly full-grown. Not previously recorded in the San Joaquin Valley from north of Buena Vista Lake.

Thryomanes bewicki drymæcus. San Joaquin Wren. Several were seen in thickets near the mouth of Kings River, June 20; one specimen.

Troglodytes aedon parkmanii. Parkman Wren. A few were seen in tangled undergrowth among willows near the mouth of Kings River, June 23; one specimen.

Telmatodytes palustris paludicola. Tule Wren. Rather common and breeding among the tules at the north end of Tulare Lake, June 18-24; one specimen.

Psaltriparus minimus californicus. California Bush-tit. A small flock was seen in bushes on Arroyo Los Gatos, northwest of Tulare Lake, July 1.

Poliophtila caerulea obscura. Western Gnatcatcher. Several seen among tules and small willows on peat islands in Summit Lake, June 25.

Sialia mexicana occidentalis. Western Bluebird. A few were nesting in holes in tall willow trees at Summit Lake, June 25; one specimen.

Washington, D. C.

HUACHUCA NOTES

By F. C. WILLARD

DURING a number of seasons spent collecting in the Huachuca Mountains, in Cochise County, Arizona, I have noticed a great difference in the altitude at which various species were to be found nesting on the eastern and the western slopes.

A description of the range may be desirable to understand the difference referred to. The main ridge extends from south-east to north-west. On the east a flat mesa extends from the San Pedro river to the foot of the mountains, which rise rather abruptly but uniformly from this point to the summit of the main ridge some 5000 feet higher up. The mean altitude of this ridge is 9000 feet. The average distance is about seven miles by trail. Several lateral ridges extend toward the east nearly to the mouths of the canyons and at a height little less than that of the main ridge. These laterals are the partition walls between a number of deep and cliff-lined canyons.

Going over the divide onto the western slope the whole character of the mountains changes. The descent is very abrupt for the first two miles, after which it is gradual, ending in a number of low hills and rolling mesas, barren on the ridges, with a scattering growth of oaks on the slopes. There are no lateral ridges of any height on this side and the canyons are more shallow and more poorly watered, with a growth of trees scanty in comparison with that of the eastern slope. The growth for the first two miles down from the ridge is practically all scrub oak brush so thick that it is impossible to walk thru without cutting a trail. This zone is very limited in bird life. Black-throated Gray Warblers nest here at 8000 feet, while on the east they are not in any numbers over 7000 feet. Roadrunners nest in these thickets and are practically unknown on the east above the foothills, altitude 5000 feet. Arizona Juncos and Mountain Towhees complete the list of birds nesting here but they are found also at the same altitude on the eastern slope and on the summit.

On top of the main ridge and on the high laterals on the east, Chestnut-backed Bluebirds, Western Robins and Rocky Mountain Nuthatches nest. They are absent from the eastern side but are even more common at 4000 feet on the western slope than on the summit.

The Violet-green Swallow nests on the summit and down to 7000 feet on the east. It does not nest at all on the west. The Lucy Warbler nests commonly up to 4500 feet on the west, but I have no record of its nesting within eight miles of the foothills on the San Pedro side.

Plumbeous Vireos nest at 4000 feet on the west and not under 6000 feet on the east. The Stephens Vireo is present in a few localities at about 6500 feet on the east and is entirely absent from the west.

The Brewer Sparrow nests at 4000 feet on the west and is entirely absent on the east. Long-crested Jays nest commonly at 6000 feet on the east but only a few pairs on the west, and those right close to the ridge, not lower than 7000 feet.

Desert Sparrow Hawks are quite common on the west nesting in hollows in the sycamores along the canyon bottoms. They also nest on the summits of the ridges, but none at all in the canyons on the eastern side.

Western Nighthawks nest on the flat mesas between the canyons on the western slope but are rarely seen within several miles of the mountains on the San Pedro side.

Buff-breasted Flycatchers are found at 4500 feet on the west and not under 6500 on the east.

The Rivoli Hummingbird nests from the summit down to 5500 feet on the east but not at all on the west.

These are a few facts as I have noted them but I have no theory to offer as to why they are so in any case. An exhaustive study of the food supply might explain it; but superficial observations in that line have afforded no clue. Neither do climatic conditions. It is still an interesting subject for one to speculate upon.

Tombstone, Arizona.

FROM FIELD AND STUDY

A Striking Example of Protective Coloration.—The accompanying photo of an adult Rocky Mountain Screech Owl standing at the entrance of its nesting cavity illustrates more forcibly than any description, the remarkable similarity between many birds and their typical characteristic environment.

In this case the soft grays and browns of the owl's plumage blend perfectly with the lights and shadows upon the grayish tree trunk which forms the background, and this picture further answers the question so often asked as to why so many observers never see a screech owl during their woodland tramps. The only tell-tale bit of color in the make-up of these little fellows is their brilliant yellow eyes, but as the latter are nearly always closed during the day, this does not interfere with the perfection of their concealment to any great extent.

No better proof of the effectiveness of this protective coloration may be had than that the ever vigilant arch villain of the woods, the Magpie, seldom espies this esteemed enemy of his, as he sits stone still but in plain sight; but when from any cause the owl is forced to take wing he is immediately the center of a noisy mob of Magpies. But as soon as he is again able to assume his tree-like statuesque pose his tormentors seem at a loss to understand his sudden transformation and quietly depart in search of more profitable villiany.—R. B. ROCKWELL, *Denver, Colorado.*



ROCKY MOUNTAIN SCREECH OWL: AN EXAMPLE OF
SPECIAL, PROTECTIVE RESEMBLANCE

The Bryant Hybrid Hummingbird.—In *The Auk* for 1907, p. 312, Thayer and Bangs record and describe a hybrid hummer from the Bryant collection of mounted California hummingbirds. They also refer to my note entitled "Broad-tailed Hummingbird in California" and suggest that the specimen recorded by me was really the hybrid now described by them. I have no doubt that they are correct in this as well in the correction of the date as given in my note. I published the record without having seen the specimen, depending upon the verbal notes fur-

nished by Mr. Bryant who refused to publish that or any other record himself. Fortunately, Bryant's notes, written on the tag of their specimen, have enabled Thayer and Bangs to kill my erroneous record of *Selasphorus platycercus*.—RICHARD C. MCGREGOR, *Bureau of Science, Manila, P. I.*

Pipilo Clementæ Excluded from Santa Cruz Island Avifauna.—After careful examination and comparison of measurements of a series of towhees from Santa Cruz Island, I am satisfied that this form is *Pipilo maculatus megalonyx* and not *Pipilo clementæ*, as heretofore supposed. In the specimens from San Clemente Island there seems to be a slight difference in the size of bill and feet. In coloration the difference is extremely slight, if any, compared with *Pipilo maculatus megalonyx*. However, my series from Clemente is too small to judge this from. There is no doubt, however, that the form found on Santa Cruz Island is not *Pipilo clementæ* but *P. m. megalonyx*.—C. B. LINTON, *Long Beach, California.*

A Plan For Co-operative Ornithology.—The progress which has been made in the study of American Ornithology during the past fifteen years has been truly remarkable and it is probably a safe assumption that nowhere else on earth has as much scientific knowledge been gathered in so short a time. Yet notwithstanding this fact, not one work of any great magnitude has been undertaken, dealing with the life histories of North American Birds, since the peerless Bendire completed the second volume of his "Life Histories," in 1895.

During all the intervening time an army of bird lovers have been constantly at work collecting a vast amount of data and information regarding the life histories of our birds, the greater part of which has found its way into thumb-worn notebooks and dusty pigeon-holes. A very small part of these investigations have been given the publicity they justly deserve thru the medium of our scientific periodicals; but it is undoubtedly true that the published portion of ornithological knowledge constitutes a very insignificant part of the whole.

The realization of this fact has always been a source of wonder and regret to me; and in this connection I have often asked myself the question, "Why cannot the bird lovers of the country band together for the purpose of putting in black and white a great deal of the knowledge that now is unavailable thru lack of publication."

Further thought along these lines made it plain that the first requisite in an undertaking of this kind was an instrument of publicity, and the management of THE CONDOR promptly offered their magazine as a solution of this problem.

The details of an undertaking of this kind are far too complicated to be outlined by any one person; but very roughly my ideas are as follows:

There are very few bird students but who have certain species of birds with which they are intimately acquainted. According to location and environment these species vary among different students, and those students whose acquaintance with a given species is very intimate, must of reason be the recognized authorities on those given species. For example, after his wonderful experience among the California Condors and the subsequent study he made of them, there are very few who would not admit that Mr. Finley was an authority on these birds. The same is true of almost any student; he has his "pet" birds that come in for a large share of his attention, and his knowledge of these species is necessarily much greater than that of another student whose interest is centered on other forms.

Now if the men who are authorities on certain species would undertake the compilation of existing information regarding these species from all sources, and the combined results of this investigation could be embodied in one work, the result would undoubtedly be the greatest ornithological work that was ever published.

One of the great advantages of a co-operative plan of this kind would be that the work could be divided among all the students of the country instead of deluging one man with this vast amount of data. On the other hand the chief difficulty would probably lie in securing enough men who are authorities on certain species, who would be willing to assume the responsibility of collecting and compiling the necessary information.

Wide publicity, a thoro organization, and the active cooperation of a large part of our active students would be absolutely necessary to the ultimate success of the undertaking; but once the work is gotten under way, the characteristic perseverance of American Naturalists would undoubtedly carry it thru, and when completed the ornithological fraternity would be the proud possessors of a monumental work.

I fully realize that upon first thought the whole idea seems rather vague and ethereal, and without active co-operation from a large number of students it would be entirely impractical; but it is a question well worth some thought from CONDOR readers. My ideas are necessarily very crude and incomplete, and I should like very much to see this question fully discussed.—R. B. ROCKWELL, *Denver, Colorado.*

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California

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WILLIAM L. FINLEY } Associate Editors
ROBERT B. ROCKWELL }

Hollywood, California: Published Sept. 21, 1908

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States
Mexico, and U. S. Colonies, payable in advance

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other
countries in the International Postal Union.

Claims for missing or imperfect numbers should be
made within thirty days of date of issue.

Subscriptions should be sent to the Business Manager.

Manuscripts and Exchanges should be sent to the
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Advertising Rates on application.

EDITORIAL NOTES

We regret exceedingly that certain of the photographic illustrations in this issue show signs of retouching. This was done by the engravers without our knowledge, and if it were not for unduly delaying the issue we would have demanded a new set of half-tones. The practice of retouching half-tones for scientific illustrations is not commendable any more than the perpetration of fake pictures.

Mr. H. E. Wilder, of Riverside, is assisting Mr. H. S. Swarth in exploring the Trabuco region of southern California, in the interests of the University of California Museum.

Messrs. Herman T. Bohlman and William L. Finley who spent the summer in southeastern Oregon report a very successful trip altho one full of hardship. They made the trip south from The Dalles in Mr. Bohlman's White Steamer, which had been rebuilt with a new body so as to carry a complete camping and photographic equipment. In all, they have traveled over a thousand miles, without accident or breakdown, which makes a very good record for a summer's work in the field.

Bohlman and Finley spent some time about Malheur Lake which they claim is the largest and most important feeding and breeding ground in the West for water fowl. The region is so extensive it took considerable time to locate the various colonies of breeding birds. The last trip on the lake they were out for nine days in a small boat exploring and photographing. They report a fine colony of White-faced Glossy Ibis, but the colonies of Egrets that formerly lived on the lake have been totally an-

nihilated by plume hunters. After a month's search but two of these birds were seen and no nests could be found.

Mr. Finley writes: "We exposed over sixty dozen plates during our trip and ought to have something good." Readers of THE CONDOR know that when Finley and Bohlman go into the field they generally get good results worth striving for. Some of these will be published in future issues of this magazine.

Thru the efforts of Finley and Bohlman, backed up by the National Association of Audubon Societies, two more national bird preserves have been set apart. These are the largest and most important yet constituted, and are to be known as the Klamath Lake Reservation and the Lake Malheur Reservation. Both are in southern Oregon, the former extending over the boundary into northeastern California. They are the breeding grounds of Canada Geese, many species of ducks, Ring-billed and California Gulls, White Pelicans, Farallone Cormorants, Caspian, Black and Forster Terns, Pared Grebe, White-faced Glossy Ibis, Great Blue and Black-crowned Night Herons, and many of the smaller shore and marsh birds.

Mr. Rockwell's plan for cooperative ornithology presented on the opposite page, is well worthy of serious consideration. The columns of THE CONDOR are open to all who are interested in this subject and we will welcome suggestions and criticisms.

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Revised to August 1, 1908

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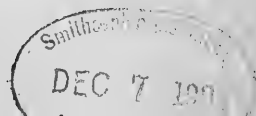
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Volume X November-December, 1908 Number 6



COOPER ORNITHOLOGICAL CLUB



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Entered as second-class matter February, 1908, at the post office at Los Angeles (Hollywood Station), California, under Act of Congress of March 3, 1879.

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A CORNER IN THE COLONY OF CASPIAN TERNS ON LOWER KLAMATH LAKE

Photo by Finley and Bohlman

THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume X

November-December 1908

Number 6

RETROSPECTIVE

By HENRY B. KAEDING

WITH the present issue the CONDOR closes its first decade, and perhaps we may be pardoned if we occupy a few moments of our readers' time in looking back or planning ahead. Ten years: a long time for some of us, yet all too short for others. Ten years have wrought their changes in all our lives and left their impress on the ornithological work of the Pacific Coast; and it is with no small feeling of pride that the CONDOR, thru and with its mother organization, the Cooper Club realizes the great strides that have been made in the promulgation of bird knowledge and protection, and the share that we have all had in the work.

When the Cooper Club was formed in June, 1893, by four earnest bird students in San Jose, little did anyone think of the significance of the movement started, or the extent and magnitude that would be reached in the space of fifteen years. Those were the days when H. R. Taylor was publishing the old *Nidiologist*, and it was made the official organ of the Club. The first officers of the Club were: President, W. H. Osgood; Vice-President, H. R. Painton; Secretary, Chester Barlow; and Treasurer, F. A. Schneider. Monthly meetings were held, and papers read and later published in the "Nid", as the paper was affectionately called.

The "Nid" filled a long felt want: prior to its issuance we had no publication on the Coast of its kind, and a deep debt of gratitude is due it and its publisher for the impetus it gave to ornithology among men who had hitherto been working independently. By means of the "Nid", and the Cooper Club, we were enabled to get together, to communicate to each other our ideas and discoveries, and to systematize our work.

The Club grew slowly month by month; by the end of the year 1893 there were seventeen members and by the first anniversary of the Club there were twenty-five; and the membership kept growing till by the end of 1896 we had sixty-seven members. The systematic work of the Club up to that time had been confined to the life histories of the Vireos and Wrens of California, and the general trend of the papers on all subjects was along the lines of the recording of observations, migration and nesting dates. Notable among the papers presented were records from

Guadalupe Island and other Lower California points that at that time were little known; the nesting of the Western Evening Grosbeak was for the first time authentically described and a superb photo in colors of the nest and eggs was published as a supplement to the "Nid"; the nesting of the White-throated Swift was also described for the first time authentically. Numerous photos were published illustrating papers and articles, and in general the close of 1896 showed a very satisfactory record. But better than all the work done and records made was the undercurrent of co-operation that had set its permanent tide in movement to carry upward to success the work of ornithology in California; we couldn't see it then, but it is plain enough when we look back and muse on the old days, and when we compare them with the present.

With the May, 1897, issue, the old "Nid" suspended publication after nearly four years' life, and the Cooper Club was without an official organ for over a year; but the necessity for such being obvious, the necessary steps were taken during the fall of 1898 for the publication of a Club Bulletin, and at the annual meeting of January, 1899, the final resolutions establishing the Bulletin were passed and the initial number appeared at once. This time between the cessation of the *Nidologist* and the issuance of the Club Bulletin was really the critical period of the Cooper Club's existence, and but for the tireless efforts of certain members, among whom shine out Barlow, Emerson, Grinnell, McGregor, and Taylor, the interest of the members was in a fair way to cool. More than this, the older and gray-headed members of the Club scoffed at the idea of maintaining an official Bulletin and predicted disaster; but they were in the minority and disregarded, and time has shown them wrong.

So with the January, 1899, issue the first number of the Bulletin of the Cooper Ornithological Club was launched, and it marked a new era for the Club and for California ornithology. A new tone was manifest at once; it was as if we had all come to a realization of the fact that we were engaged in earnest work and had assumed responsibilities that we must carry to a successful issue; we had started something in the face of opposition that our pride spurred us to finish. Besides, we were growing older; and the papers published showed at once a more serious tone and an absence of a flippancy that had no place in a scientific journal. The description of new species began, and to Richard C. McGregor belongs the honor of describing the first new race published in the new Bulletin; four new birds were described during the first year of the Bulletin and many valuable records of rare and little known species were given to the world.

Chester Barlow—responsible for the formation of the Cooper Club nearly six years before and strongest advocate of the new Bulletin, main-stay and hardest worker of us all—shouldered the brunt of the work and assumed the editorship of the new journal; H. R. Taylor and Howard Robertson were his assistants and Don Cohen and A. I. McCormick handled the business end. Gradually the quality of the journal bettered; half-tones began to be used in profusion and the size of the issues increased almost monthly; things went merrily as a wedding bell till November 6, 1902; and then, a bolt out of a clear sky, came the news of Barlow's death. I need not dilate on the extent of our loss; to know Barlow was to love him and we all knew him. Personally his place can never be filled in our hearts; but as far as the CONDOR was concerned, Walter Fisher stepped into the editor's chair and held it for three years and his work speaks for him stronger than can I. On his voluntary retirement at the end of 1905, Mr. Joseph Grinnell took the reins and is the present incumbent.

One has but to run over the files of the Bulletin of the Cooper Ornithological

Club, called the CONDOR from 1900 on, to note the almost monthly improvement in tone, typography, size and general excellence. Local lists soon became prominent and their value cannot be overdrawn. The practice of listing species by their scientific names, giving the vernacular name the minor place, soon became common and marked a radical step for the better. In the issue of November, 1900, a typographical scheme was adopted of printing the scientific name of the species in heavy type and the vernacular name in light small capitals that can hardly be improved upon, and it is hoped that this method will be made permanent in the future. Reference to pages 136-138 of that issue will show that no subsequent typographical scheme has been quite so successful in impressing upon the eye at first glance the name of a species sought; and it may not be irrelevant here to once more urge upon writers to allow no article to enter the pages of the CONDOR in which the scientific name of the species is not given. True that a text of a popular article, cumbered with scientific names, may be made bombastic and clumsy in the extreme, but it must be remembered that our work is scientific first and popular second; and if a species is mentioned in such a manner that it constitutes a record or *may* constitute one, the giving of the scientific name is a debt the author owes to ornithology. This is a subject that has been discussed from many points of view in the CONDOR, and the delightful Sierran gem of J. M. Welch has been used as an illustration of a type of article whose poetic charm would have been entirely destroyed by the introduction of a single Latin name (Vol. I, pp. 108-111). True; yet the Editor thought advisable to append a foot-note giving the locality written about, and had the author appended a foot-note giving not only the locality and date of his notes but the Latin names of the species referred to as well, the poesy of the writing would have been impaired not one whit, while the *record* would have stood for all time as of some value to ornithology.

This point cannot be more strikingly shown than by an inspection of the September issue of the CONDOR of the present year (Vol. X, No. 5). Of ten articles printed in this issue that deal with records of species, no less than three—nearly one-third—are entirely valueless as records simply because the species are recorded by the vernacular name alone. These are not articles that can be classed as "prose poems" in any sense whatever; they are *records*—records of value and interest; records of life history phases, records of breeding ranges of species; yet they will never get beyond the pages of the CONDOR, but, to quote Robert Ridgway in a letter of some years ago (March, 1900), "must remain buried where they now are". We are working in ornithology for the love of it—not for money; our only reward is the satisfaction of work well done, and the name we may make for ourselves; but no one can hope to see his records quoted or passed on, to the credit of his name, unless he makes those records complete and in the manner approved of by the scientific world.

In May, 1902, the incomparable photographs by Finley and Bohlman commenced to appear and marked another epoch in advancement. Field workers began to realize the immense value of good photographs, and where these had been hitherto largely confined to the photographing of nests and eggs, a new impetus was given to the photographing of live birds in their native haunts that was evidenced by the increased number of very excellent half-tones of this nature that made their appearance in the CONDOR during 1903 and thereafter. Particular mention must be made of the really remarkable series of photographs made by Walter K. Fisher on Laysan Island.

The high grade of half-tones that formed the illustrations in the CONDOR at this time rendered necessary the best grade of paper, and with increased excellence

in character of writings and typographically, the journal soon became not only an abiding place of valuable scientific record but a thing of beauty and a joy forever. From this time to the present the general tone of the CONDOR has been steadily improving and the members of the Cooper Club have just reason to feel proud of their work.

During the last ten years, the ornithological articles in the CONDOR have, with the special publications of the Cooper Club, constituted practically all that has been published on the Pacific Coast; in this space of time there has been less than a dozen other articles on ornithology printed here, with the exception of the publications of the Fish and Game Commission.

One thing that has always hampered the work of active ornithologists on the Pacific Coast has been the lack of access to any large collection of birds to work with. Workers have had only their own private collections, supplemented by material borrowed from fellow members and Eastern museums. There is on foot, however, a project to establish at a central point a large collection of birds; the plan will undoubtedly be described in due course, and all I need to say on the matter is to point out to Club members the enormous advantage that will accrue to all if this can be done. All the improvement and good work we have done in the Club has been due to co-operation; if we co-operate by combining collections the same will hold true.

Before we turn our backs to the past and face the future we must mention our absent members—just three or four of them: Barlow, Dr. Cooper, Walter Bryant, Slevin, Miss Mollie Bryan—they all had the interests of the Club and the CONDOR at heart and ever present in their minds. They strove always for the betterment of the work and the advancement of knowledge and their loss was keenly felt by all; their genial spirits are with us always and our memories of them should carry us over many a dark spot.

And now, what are we going to make of the CONDOR in the ten years to come? Where is there room for improvement? To answer these questions requires some thought, and frankly I confess that even after hard thinking the result is unsatisfactory. To improve typographically will be natural and commensurate with the march of progress in printing; improvement in caliber of writings will depend upon the work of the Club members and rests with them; perhaps an increase in the size of the journal can be looked for, but that is a financial matter that will call for a committee on finance. Of course we would like to see a CONDOR three times the size of the usual one; and a volume of 600 pages instead of 200 would be just three times as good; perhaps we will have it before the second decade is completed. But whatever form the improvements may take, let us not forget that it is up to each and every member of the Club to do his best to help out; if we all do that the future is assured.

And now, all thanks to those who have worked to bring us to this successful ending of our first ten years; we all know who you are, and we thank you; all thanks are due to the little workers as well as the big, and we only hope that you will work as hard in the future as in the past. If you need any encouragement, just read over your old files; remember the obstacles met and surmounted in the past; note the successive steps always up and on, in the improvement of the journal and the work of the Club, and then let's all pull together for an even better record in the next ten years.

Los Angeles, California.

FROM BIG CREEK TO BIG BASIN

By MILTON S. RAY

WITH TWO PHOTOS BY OLUF J. HEINEMANN

IT was early in the afternoon of June 10, 1908, that Oluf J. Heinemann and the writer arrived at Swanton. We had journeyed from Capitola to Folger by rail, from which place a short walk brought us to Swanton, which lies on and near the mouth of Big Creek. It was here that our road branched off leading up the Big Creek Canyon and over the mountains to the Big Basin.

With packs on our backs, which, besides blankets, held provisions for one week, we tramped along the thickly foliated road which winds along with the creek, stopping occasionally to pluck the wild blackberries which grew in such profusion. I do not know of a more picturesque gorge anywhere in Santa Cruz County than the Big Creek Canyon. The territory is wild, and with the exception of the power station at the foot of the grade and the lonely cabins at the dam on the summit, the whole region is peopled only by those furred and feathered dwellers who have held forth since primitive times.

After leaving the power station the road ascends abruptly, so steeply that it bars almost everyone except he be on horseback or afoot. It is the steepest road I have ever traveled, for not even those impromptu dairy roads leading to the summer pasture lands in the high Sierras can compare with it. Our pack weighed about forty pounds and the steepness of the road, and the heat of the day accentuated the weight. Thus we meandered rather leisurely and more so as we disliked to miss any of the entrancing views of this heavily wooded canyon, still in all its primeval beauty, but soon, it is said, to be stripped as many others in the country have to the last vestige.

It was almost six o'clock when we reached the group of cabins at the Boyea creek dam on the summit. Failing to find anyone about we proceeded to make ourselves comfortable in an empty bungalow, when Oscar Ewald, who has charge of the dam, made his appearance and with a hearty hospitality insisted on our sharing the best he had to offer.

Even at six o'clock, when we arrived, it was still quite a while before sunset and we sat before Ewald's cabin enjoying the rare view, for the lake, lofty trees and other surroundings strongly reminded one of those incomparable Sierran landscapes. Nearby, at a pretty little stream, Boyea Creek, which led from the dam, a Winter Wren (*Nannus hiemalis pacificus*) was pouring forth a crystal song, trilling in that silvery way, which altho it seems almost continually on a single key is extremely beautiful. A finished artist like the winter wren, it seems, does not need the range of notes that are given to a meadow lark or grosbeak. In the giant spruces and redwoods which towered above, dwarfing the cabins, Coast Jays (*Cyanocitta stelleri carbonacea*), the conspicuous bird of this section, limb by limb were ascending the great trees or anon would assemble in the rear of the cabin to dispute ownership with Ewald's cats over a dish of provender, while out among their nests in the dead trees standing in the clear waters of the lake Brewer Blackbirds (*Euphagus cyanocephalus*) discussed matters in their characteristic way.

Ewald was a man of wide experience: for many years he had been to sea, visiting all four corners of the earth, and around the evening fire many a tale he told of other lands, tho, too, much of hunting, fishing and trapping in these wilds; for here coons, foxes, deer, wild cats and even the lordly California lions still abound.

The following morning, our host insisting, we decided to remain another day. By opening the gates of the dam Ewald produced a waterfall a quarter of a mile below, which gladdened the heart of that camera fiend, Heinemann, who I think took it from six positions all looking very pleasant as it fell over the water-worn precipices among the moss and ferns. Ewald on joining us led the way along the flume which brings the water from the other dam at the head of Big Creek. Here, among those great trees, the redwood and spruce, is a region of wonderful beauty. Silent and still the great green forest walls the view in every direction, while half hidden by fallen logs, great boulders and the overhanging smaller trees and shrubs in all their bright greenery, run the ever singing brooks.

It was near the head of that pellucid stream, Big Creek, that I found a nest of considerable rarity. I noticed a Western Winter Wren disappear beneath a huge fallen redwood which lay across the stream and on examination found what was



CABINS AT BOVEA CREEK DAM, SANTA CRUZ MOUNTAINS

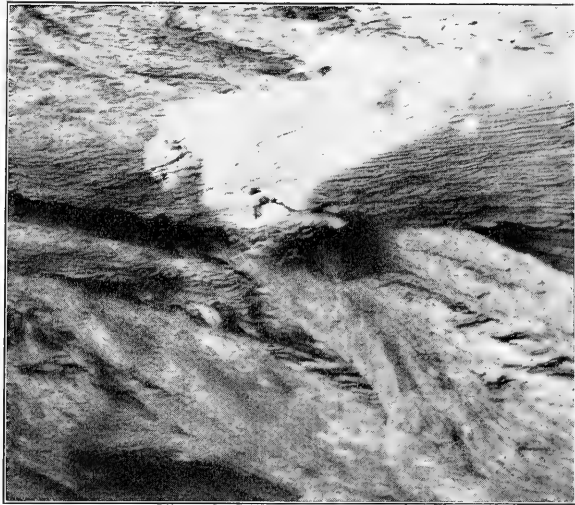
rather unusual, three nests! Two were of previous seasons, one holding an infertile egg. The third nest was but newly built. All were made of twigs, leaves and lined with moss and feathers, and placed among the bark-folds of the redwood which were particularly deep on this tree. If the nest was hard to find it was still more difficult to photograph, situated as it was, directly over and not far above the water. But Oluf's determined spirit rises when he finds a rebellious subject and after some considerable maneuvering the telling of which would reveal several state secrets, he snapped the bulb with the result shown herewith.

The trail, for this is almost a roadless country, took us away from the Big Creek Dam and up the steep mountain sides towards the coast. After reaching the top of the ridge we came to Gregory Heights where we found a large open clearing with grain fields and orchards and tenanted by many birds of the lower zones. For here, while the Black-headed Grosbeaks (*Zamelodia melanocephala capitalis*)

trilled among the orchard trees or House Finches (*Carpodacus mexicanus frontalis*) made merry along the ridge of the hotel roof, I could faintly hear songs from the realm of the Western Winter Wren and Monterey Hermit Thrush in the dark, wooded canyon below.

While returning Ewald rather surprised us by naming forty-five different trees and plants in the canyons and by the erudite way in which he discoursed on the properties of spigmint, yerba santos and other herbs.

At noon on June 12, after the meal prepared by Oscar which made up in quantity what it lacked in courses, he escorted us some distance up the road where he took leave after giving some farewell advice on roads and trails. A rocky ridge of shale, sparsely covered with brush, rises above the northern end of the dam. On these rocky ridges birdlife is almost nil and no bird songs are heard except the occasional twittering-cry of some lonely, forlorn Wren-tit. The road, dusty and dazzling white, reflected the light and heat of a torrid sun and caused us to gaze longingly to the north where the timber lands again appeared. After several miles we reached a range of mountains covered with oak and other timber but with no redwoods or spruce altho we were a thousand feet higher in elevation than the Big Creek Summit; but as Joseph Grinnell has already noted, this condition is not unusual along the coast, where the Upper Sonoran Zone is frequently found above the Transition. Orchards and many farms lie along the summit plateau of the Ben Lomond Mountains and at times the bird-life formed a rather curious combination of both zones. As a



NESTING SITE OF WESTERN WINTER WREN IN REDWOOD LOG

further illustration compare typical species found here at an altitude ranging from 2000 to 2500 feet with those noted at Big Creek Summit among the redwoods, elevation 1000 to 1500 feet.

BIG CREEK BIRDS: HUMID TRANSITION ZONE

- Coast Jay (*Cyanocitta stelleri carbonacea*)
- Santa Cruz Chickadee (*Penthestes rufescens barlowi*)
- Golden Pileolated Warbler (*Wilsonia pusilla chryscola*)
- Western Winter Wren (*Nannus hiemalis pacificus*)
- Brewer Blackbird (*Euphagus cyanocephalus*)
- Red-shafted Flicker (*Colaptes cafer collaris*)
- Olive-sided Flycatcher (*Contopus borealis*)
- Western Wood Pewee (*Contopus richardsoni richardsoni*)
- Vaux Swift (*Chaetura vauxi*)
- California Quail (*Lophortyx californicus californicus*)
- Point Pinos Junco (*Junco hyemalis pinosus*)
- Russet-backed Thrush (*Hylocichla ustulata ustulata*)
- Monterey Hermit Thrush (*Hylocichla guttata slevini*)

BIRDS ON THE PLATEAU, BEN LOMOND: UPPER SONORAN ZONE

California Thrasher (*Toxostoma redivivum redivivum*)
 San Francisco Towhee (*Pipilo maculatus falcifer*)
 Vaux Swift (*Chetura vauxi*)
 Tree Swallow (*Tachycineta bicolor*)
 Intermediate Wren-tit (*Chamaea fasciata intermedia*)
 California Purple Finch (*Carpodacus purpureus californicus*)
 Green-backed Goldfinch (*Astragalinus psaltria hesperophilus*)
 Bush-tit (*Psaltriparus minimus minimus*)
 California Jay (*Aphelocoma californica californica*)
 California Woodpecker (*Melanerpes formicivorus bairdi*)
 Willow Woodpecker (*Dryobates pubescens turati*)

Perhaps nowhere in the county can a more magnificent view be had than from the heights west of Eagle Rock where looking over the precipitous mountain sides the whole eastern section of Santa Cruz County lies before one, stretching out canyon after canyon eastward to that giant peak, Loma Prieta, and with peaks and peaks still further east fading away into dim blues and grays. Scenery such as this always made me fear for our supply of film packs, for Heinemann, would give a subject like this a dozen exposures and simply wear a guilty smile when I remonstrated.

On the summit we could find no one who could speak English and the Italian farmers could only direct us on two roads. "This way, Santa Cruz; that way, Boulder Creek," was the limit of their road knowledge and almost of their vocabulary. At last wearying of trying to find the Big Basin Road we took the Jamison Creek Road, altho it took us at least fifteen miles out of our way, in the direction of Boulder Creek. This road meets the one from Boulder Creek about five miles from the latter town and it was at these cross roads, in a deserted cabin that we spent the night.

Resuming our tramp in the morning we repassed over the same ground we had before the previous year. The site of the water-ouzel's nest* was visited, but no sign of it remained. We left the route of last year at the head of the grade, however, and took a short cut, which with devious windings went thru a stumpy country shorn of its timber, to Blume's Old Mill on the very edge of the Big Basin forest wall. Here we paused for lunch. Built under the eaves of one of the deserted buildings I noticed a nest of the Black Phoebe (*Sayornis nigricans nigricans*) with large young and on Blume's Creek close by, an arm's length in a sand bank, I pulled forth three young Belted Kingfishers (*Ceryle alcyon*) who posed for us on a log. The juveniles amused themselves in the interim by locking bills and paddling across the log in an awkward, flat-footed fashion, and I noticed it was always a backward movement. Might not this be a provision of nature to prevent young birds leaving the nest?

A short walk from here thru the thick woods brought us to the main road in the Basin and another along it equally short, to the Governor's Camp in the very heart of this, the great Santa Cruzan forest, where we had arranged to spend some time, and a paper treating of which, if the editor be in a lenient mood, may be laid before CONDOR readers at a future date.

San Francisco, California.

*CONDOR IX, 1907, p. 175.

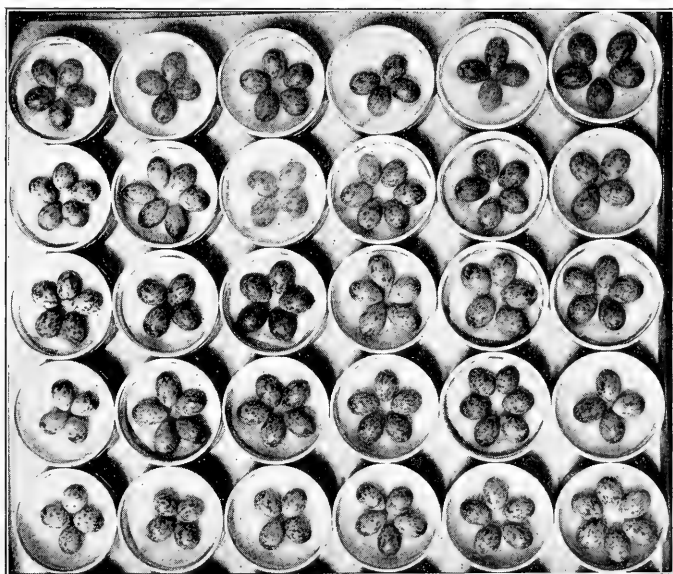
ARRANGEMENT OF AN OOLOGICAL COLLECTION

BY HERBERT MASSEY, M. B. O. U.

WITH TWO PHOTOS BY THE AUTHOR

I HAVE read with interest "Some Hints on the Preparation of an Oological Collection," by Robert B. Rockwell in your issue of March-April, 1908, and think that a word or two as to how collections are arranged in this country may be of interest to your readers.

I am not going to enter into a controversy regarding the merits or demerits of "Egg Collecting," but I will say this (and it is a view that is so often overlooked), that the egg-collector does far less harm than the skin-collector: for if a first set is taken the birds will assuredly lay again, but if the birds are shot there is the end. A collector who has a long series of any particular species (and you must have very



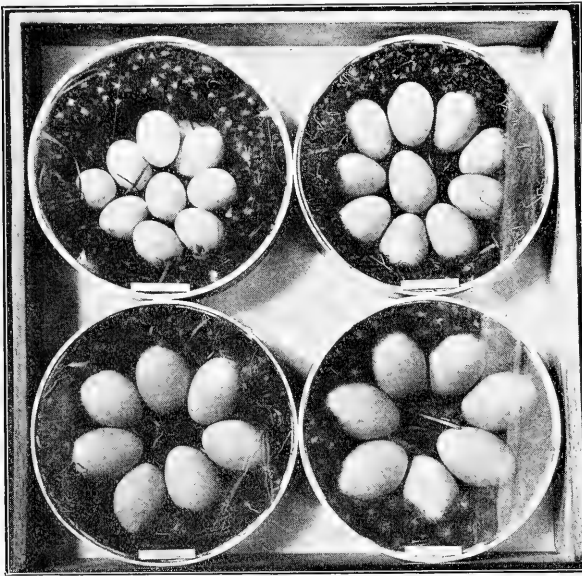
SERIES OF EGGS OF THE TREE PIPIT (*ANTHUS ARBOREUS*),
SHOWING ARRANGEMENT IN GLASS-TOPPED TRAYS

long series of many species), is classed as an egg-hog; but a collector who goes out and sends home some thousand skins to his museum is thought to be a very fine fellow indeed. A series or collection of eggs, well arranged and set out is much more a thing of beauty than a drawer full of rolled up skins; and a private collection or a museum should be pleasing to the eye as well as instructive, and give pleasure to the ordinary lover of nature, as well as to the student.

As regards the housing of a collection it is difficult to speak, as most people have different ideas of cabinets, size of drawers, etc., etc. My cabinets are made of oak, and the drawers of the very best white deal (for lightness), stained fronts, with runners of hard wood. The eggs are arranged systematically based on Howard Saunders' list, with a few exceptions; this way sometimes leads to loss of space where the eggs of birds in the same family vary greatly in size, but this is a small loss compared to the gain in having a systematic arrangement.

Where the eggs are singles as in the Guillemots, Puffins, Razorbills, etc., etc., I have glass frames to the drawers, easily fitted and easily lifted; the eggs rest on sheets of cotton wool, in rows with thin divisions of wood separating the rows; in all the other cases each clutch is in a box to itself, glass topped and nearly air-tight, certainly dust proof; the drawers measure $16\frac{1}{4}$ inches by $16\frac{1}{4}$, so that I can get in 6x6 boxes of $2\frac{5}{8}$ inches, 5x5 boxes of 3 1-8 inches, 4x4 boxes of 4 inches, and 3x3 boxes of $5\frac{1}{4}$ inches diameter. All the boxes in the same drawer are of the same depth and come almost flush with the top of the drawer, but where large and small eggs come in the same family a little maneuvering is necessary which in a large collection is simple.

I now come to the most important point of all, and that is the labeling; and it is here that I think Mr. Rockwell is at fault; in spite of what he says I feel sure that the triangular label must detract in some way from the appearance of the eggs.



NEST AND EGGS OF COMMON TEAL, LONG-TAILED DUCK,
HARLEQUIN DUCK AND POCHARD, SHOWING
METHOD OF LABELING

In the first place I always use round boxes, the name of the species pasted in the inside of the box, close up to the top edge and easily visible. Most of the data is written on the outside of the bottom of the box; for museums as well as private collections the average person does not want data, and anyone sufficiently interested will not mind the trouble of lifting the box (this you can easily do with the round box on account of the spaces between boxes, whereas in the square boxes fitting tightly in a drawer it is not so easy), and reading the particulars; these particulars if at all lengthy, could not possibly be written on the triangular label.

All my eggs are entered in my egg-book, each species under a number, and each set having a different set mark. Thus my number for Golden Eagle is 18. The first set would be 18 (and if c-2 both eggs would bear the same mark), the next set would be 18A, 18B, 18C, etc., etc., so that in a collection no two sets would ever bear the same marks.

All details are entered in the egg-book and some are so lengthy that a card would be of no use, nor, for the matter of that, the bottom of the box either; every egg in my collection is numbered and that number appears on the bottom of the box with data as far as possible, and if any further particulars are wanted it is very easy to refer to the egg-book.

It may be argued that handling the boxes would be detrimental to the contents, but the cotton wool is so arranged that the pressure of the glass lid is sufficient to keep the eggs from moving and in fact the glass just touches the eggs; I have found this method very useful in sending eggs for exhibition for lectures, etc.

as each egg has not to be separately packed. I have had eggs so arranged for over 30 years, and the cotton wool is as clean as when it was put in, showing that at any rate the boxes are dust-proof. We are fortunately not troubled with many insect pests, our great enemy being the damp, and this as a rule can be guarded against.

I enclose a few photographs showing the different sizes of the boxes. [Two of these photos are reproduced herewith.—Ed.]

Burnage, England.

A MONTH'S BIRD-COLLECTING IN VENEZUELA

By JOHN F. FERRY

AFTER a four days' sea journey from Panama, in a large English steamship, I arrived in La Guayra, Venezuela on April 21, 1908. An enormous mountain, La Sella, frowns down upon the little seaport huddling upon the narrow strip of shore at its base. The town is hot and unhealthy, and I was glad to spend but one night there and leave next morning for Caracas. The railroad journey thither is one of the most magnificent in the world. The steep ascent requires the track to wind in and out along the sides of deep canyons, and affords a view of the deep blue Caribbean sea and its palm-lined shore for great distances. The day after arriving in Caracas my bird-collecting, for the Field Museum of Natural History, began.

The valley in which Caracas lies is an extensive level plain surrounded by stately hills. To the north lies the great Sella mountain, which rises 9000 feet almost perpendicularly from the sea, one of the grandest spectacles in the world. Most of the mountains about Caracas are bare, the soil being red and sun-baked. Canyons are usually forested, as are also many of the mountain tops. The plain during the dry season is extremely arid and parched, but like our dry southwest the rainy season transforms such a waste into fields of waving grass and flowers. Irrigation is carried on extensively and fields of cane and other crops relieve the eye with their broad stretches of green. The little river Guaire flows thru the valley and most of its course is thru cultivated fields. Its banks are lined with dense brakes of cane. Coffee plantations are much in evidence. They are very attractive to the eye of the traveller. The coffee bushes resemble a miniature orchard, the trees being planted in rows and of a dark green color. The blossoms are beautiful and are very fragrant. But the most curious feature of the coffee plantation is the magnificent, tall shade trees whose branches interweave far overhead, and keep the hot tropical sun from the delicate coffee bushes. These plantations are usually favorite bird haunts; and particularly so in the Caracas Valley where there are practically no native forests. In these coffee plantations birds are found in surprising numbers, and here the collector strolls back and forth, often not knowing which one of several desired species to shoot, so great is the variety of birds there. One tall tree growing in the coffee plantations bears red, star-like blossoms which contain a small fruit. This tree is as popular with the birds as our choke-cherry tree at home, and often most of a morning's collecting was done beneath one tree. At one time I have seen several species of hummers, coerebas, euethias, yellow warblers, flycatchers, several species of tanagers, orioles, paroquets, robin-like thrushes, grosbeaks and woodpeckers. The only difficulty encountered was the great height

of the tree, the food supply being greatest there, and the birds consequently more abundant.

Some low spurs of the mountains project into the valley, and deep arroyos often cut its surface. Where fire and the machete have not reached, a dense, thorny chaparral, woven with strong string-like vines, still remains. It is a safe refuge for the birds, and birds shot in its midst are usually beyond recovery. Its edges however make an excellent collecting ground. Several birds not seen elsewhere occur here.

One is the Rose-breasted Thrush (*Rhodinocichla*). It is a bird of remarkable beauty, its throat and breast being a deep pink. But what makes the bird interesting to me are the circumstances relating to its capture. While softly walking by the edge of the thickets above described, a strange rustling was frequently heard in the dead leaves under the bushes. Steal up as quietly as I might I could never get a glimpse of what might be causing it. My first thought was a snake, then a mouse, and for a time I believed it might be a huge beetle whose laborious walking might have produced the faint rustling sound. Often the sound began but a few feet from me and apparently in a spot which I could see perfectly. The experience was becoming actually uncanny, when at last one of many patient vigils had its reward. The strange sound this time came from a comparatively open area, and by putting my eye near the ground, I could get an uninterrupted view for some distance into the brush. At last the sound and its mysterious cause were associated. For an instant I saw a dark bird about the size of a towhee bunting, and quickly fired. The slatey black plumage of the bird was all I saw as I painfully made my way thru the thorns and vines, but when I took the bird in my hand I saw the exquisite pink of the breast and throat. Later I discovered why the bird's actions in the brush were so mysterious. It has the scratching habit of the towhee, but frequently stops only long enough to scatter a few leaves, and then a few noiseless hops take the bird to a different quarter where the scratching may be heard again. Thus the bird dodges hither and thither within a small area and while its presence is constantly betrayed to the ear, the eye cannot penetrate the dense thicket and discover the bird. Several other thrush-like birds have this habit, and all told, I was put to much vexation and loss of time in getting a few of these tormenting creatures.

One day while walking among the forlorn, brushy hills I was surprised to flush a covey of quail (*Eupychortyx*). As they darted away they looked much like our own Bobwhite. To my despair the flock sought safety in a patch of the densest shrubbery, and I had to give up the pursuit with keen regret, as these quail seemed strangely out of place, so like our own bird, and yet so far from home. Fortunately my curiosity was satisfied; for a few days later I again flushed a flock, and this time took my chance at a wing shot, in the endeavor to keep my quarry from gaining the thicket. My surprise and delight were equal to each other, when the bird I singled out fell to the ground. At the time the bird seemed strikingly suggestive of both the California Valley Quail and the Bobwhite. On its head is a long tuft of tawny feathers, and on its breast a patch of chestnut, while its general body markings are quite similar to those of the Bobwhite. All their habits that I observed were typically quail-like.

A very dainty, curious bird is the tiny green paroquet (*Psittacula* sp.). It flies about the cultivated fields and among low trees, uttering a high-pitched note which is the subdued screech of its larger relatives. It climbs nimbly up and down weed stalks while feeding upon their seeds. These birds are tenacious of life, like all parrots, and unless killed outright, they will wriggle in among the

grass and leaves where they fall, and being entirely green themselves, they are seldom found when thus concealed.

A very interesting bird met in the vicinity of Caracas was a tiny woodpecker, about the size of one's thumb. Its plumage is of an odd pepper-and-salt pattern, being an admixture of black and white. It clammers slowly about twigs something after the manner of a nuthatch. The exquisite sky-blue tanager (*Tanagra cana* subsp?) was very abundant here and also a jet black species relieved only by white spots on the shoulders (*Tachyphonus*).

The whirr of humming-birds' wings was almost constantly in one's ears. An odd species was tolerably common here, its long white tail feathers causing it to gyrate in a singular manner as it hovered about a flower. The small finch (*Euethia* sp?), the males mostly black, the females olive gray, were abundant here and occurred in flocks about the borders of cultivated fields. The red-start (*Setophaga ruticilla*), water-thrush (*Seiurus noveboracensis* subsp?), and lesser yellow-legs were the only North American migrants seen here. Swifts were common but their rapid flight baffled my attempts to secure one. There were several varieties. A common bird among the brushy hills was one of the Dendrocolaptidæ (*Sittasomus* sp?). It has a note very like our song sparrow.

For two weeks I collected in the vicinity of Caracas, visiting two different localities, west of the city. A pleasant feature of my stay was several visits to the city itself. Travellers have written so much in regard to its present and historic interest, its beautiful buildings and its fascinating life that it is not necessary for me to speak of it here. I should like to add one word as to its climate. Its altitude is 4017 feet so that notwithstanding the fact that it is but ten degrees from the equator, it has a delightful climate, 65° to 70° the year around. The air has a soft, balmy quality which is not enervating.

In this respect Caracas is in marked contrast to La Guayra, its seaport, which lies over the range of mountains to the north. Tho only six miles in an air line from Caracas and 4000 feet below it, La Guayra is one of the hottest places in the world, having a temperature the year around of 100 degrees. It is a very unhealthy city, directly upon a low, flat coastal plane. While we were there the bubonic plague was raging, and we finally had to leave the country hurriedly by another port, because of the rigid quarantining of La Guayra, and the possibility of the same being done to other ports. How 900 bird-skins and two trunks full of personal property were held for months in La Guayra, and were actually reported as destroyed, but finally sent safely to this country, is a long story with an unexpectedly happy ending, but too long to relate here.

On April 6, 1908, Dr. Ned Dearborn of the Field Museum, arrived at La Guayra from Curacao, one of the Dutch West Indies, where he had been recently collecting, and we worked together for two weeks in Venezuela, when the aforesaid plague broke out, and we hurried out of the country. The following day, April 7, we left Caracas by train for the famous Valencia plains, where we made our headquarters in the thriving and attractive town of Maracay. Here we had most excellent collecting. The country was perfectly flat, being once the bed of the now comparatively small Lake Valencia. Occasionally low ridges or spurs of hills from the surrounding mountains project into this plain. Some of the land is marshy, and a small brook was utilized for irrigating a few adjacent plantations. Most of the country, however, was very dry, and thorny, almost leafless bushes covered most of landscape. The fringes of forest severely parched by the drought, harbored a great variety of bird-life, and the thirty or forty birds which the collector would find in his basket after about three hours' collecting is surprising to one

used to conditions in northern climes. This locality was remarkable for its number of large and handsome hawks. The Audubon Caracara and the Wood Ibis were welcome representatives of our own bird-life.

At Maracay we were objects of great interest to the inhabitants. A small army of boys and youths followed us into the fields each morning. They made successful collecting quite impossible, and how to get rid of them was a great problem. Simple forbearance was the main key to this problem's solution. By keeping up a brisk pace and purposely selecting cactus-grown and thorny spots—very trying to bare feet—we found the number constantly diminishing until but two or three hardy spirits still remained. These about balanced the account by retrieving birds shot, or pointing out others in the trees. These native lads showed a wholesome fear of our guns, and when we affected indifference as to their whereabouts, when we took aim, the timid ones gradually gave up the chase. While at work in a stone-walled room, with its iron-barred windows opening on the street, a crowd of curious faces always looked in on us, often hanging to the bars to get a better view, and in consequence shutting out much-needed light. Sometimes the room was almost filled with idle onlookers, but this proved not to be an unmixed evil; for several of our visitors were ones who proved of the greatest help to us. The most distinguished of these visitors was no less a personage than Señor Andrade, Castro's predecessor as president of Venezuela. He was a charming man—a perfect Castilian in manners and dignity. He readily offered to grasp our bloody hands as we rose from our taxidermy work to greet him. He showed a great interest in our work and cordially asked us to call upon him in his home at Caracas.

A very interesting character and one who later greatly aided us in our work, was a man from Texas, whose many years in Venezuela had been full of adventure. Being a mechanic by trade, he had designed a steel steamboat, suitable for the shallow waters of Lake Valencia. This boat had been constructed in Germany, shipped in parts to Venezuela and erected upon the lake by this ingenious and indomitable Yankee. He was known variously as "Captain" or "King of the Lake"; and his dominion was one of fact, for the poverty-stricken natives about the shores had no other practicable means of getting their scanty crops of coffee and bananas to the railroad. Different from what one might expect, this man was in no sense a tyrant, but was held in great esteem by the natives. Our common nationality made us friends with this man at once, and we gladly accepted his invitation to accompany him on his boat. A few days later I moved to Cabrera, a railroad station on the shore of the lake, where the Captain's steamer had its dock.

Dr. Dearborn in the meantime accepted the invitation of another of our visitors—an extremely pleasant gentleman—and in his company made a journey to this gentleman's estate high up in the mountains. Here were found a trogon and other birds not met at the altitude of the Valencia plains. Later Dr. Dearborn came to Lake Valencia. This lake is one of the scenic spots of Venezuela. Humboldt on his famous South American travels visited it, and his accounts fire one's imagination even now. Its placid, clear waters are surrounded by towering volcanic peaks, whose rugged, dark red slopes pitch directly into the lake. The shores are lined with rushes and occasional open forests of mimosa-like trees. Twenty-two hilly islands dot the lake's surface; twenty-two streams flow into it (tho not one flows out of it) and twenty-two kilometers is the length of the lake. Its area is sixty-six square miles and its altitude is 1200 feet. The lake abounds in mud flats and upon them and in the shallow water stand countless numbers of several varieties of herons, black-necked stilts and other waders; coots, ducks and grebes dot its surface. Among the rushes are seen tiny rails as well as larger ones. Immense flocks

of tree ducks circle over the lake uttering their shrill call "chiriri", from which the bird gets its native name. The wooded shores of the lake teem with land-birds and altogether this locality is an ornithologist's paradise.

Our first visit to the lake was marked by a cruise in the Captain's boat, and the day spent on the lake was one of incessant interest. Birds of many kinds were passing within gun shot of the boat almost continually, and occasionally we brought one down, but the Captain's kindness led us to use great restraint, for no sooner did a bird strike the water than he stopped the engine and had a boat lowered to retrieve the bird. The Everglade Kite, another friend from home, was common here, and the Snowy Heron (*Egretta candidissima*) and a large heron—at a distance an exact counterpart of our *Ardea herodias*—lent a familiar aspect where nearly all was strange and new. Graceful terns, pearl gray with black-tipped wings, were in sight most of the time. Occasionally a handsome large king-fisher (*Ceryle torquatus*) skimmed close to the water's edge while flying from one perch to another, and dainty little black flycatchers with white heads, occurred in abundance among the reeds at the water's edge. Crocodiles were everywhere, and one Dr. Dearborn secured with a well-aimed bullet from his three-barrelled gun.

Our most notable experience on Lake Valencia was our water-hog, capybara or "chiguiri" hunt. The latter term is the one used by the natives to designate this huge rodent. This animal might be called an immense musk-rat the size of a sheep. Its terribly long incisors are one of its most striking characters. They are as long as one's fingers, sharp as chisels, and their fearful work was seen in the way they lacerated the dogs used in hunting them. The breast of one dog and the head of another were laid open in a most shocking manner by capybaras which were brought to bay by their pursuers. The animals have wide palmate feet and toes which serve them as well in swimming as in walking on land. For the native's zeal in joining our hunt we had a local custom to thank. The padres allow the flesh of these animals to be eaten during Holy week—the time we were there—because these quadrupeds spend much of their time in the water, and thus partly partake of the nature of fishes. A party of five excellent gentlemen from Caracas, Englishmen and Americans, were here for a hunting trip and they kindly included us in the water-hog hunt which was carried on as follows:

The party, increased to twenty or twenty-five by the addition of native hunters, divided into two parts, one taking the boats and keeping close to the outer edge of the rushes, the other going afoot on land. Four natives, stripped and carrying their long, sharp knives or machetes, entered the rushes with a troop of hound-like dogs. After a seemingly long wait, there was suddenly a furious yelling of men and barking of dogs. A violent swaying of the rushes showed the quarry was making for the lake, and in an instant more a huge tawny animal made a tremendous spring, clearing the rushes and striking the water with a great splash. With head just out of water it began a rapid swimming toward the open water. Every boat gave chase, and excitement became intense. With apparently little effect upon the animal, shot after shot was fired at its gliding form, from old muzzle-loader, modern shot-gun, rifle and revolver. After each fusillade the hard-pressed beast would dive, appearing often a long distance away. Again the boats would draw near and another volley would be fired. At last weakened by its need of air, and by many wounds, the luckless water-hog was nearly helpless and from a boat at its very side, a well-placed shot would finally end its gallant fight for life. Some eight or nine specimens were secured during the morning by the party in boats. The land party did not get a shot at a single animal. One of the best specimens

Dr. Dearborn and I carefully skinned, but the skin spoiled owing to our labors at Lake Valencia being ended by an unexpected event.

When we reached land after the hunt was over, we learned that La Guayra had been rigidly quarantined because of the appearance of bubonic plague in that port. The closing of Puerto Cabello, our only other means of egress from Venezuela, might follow at any moment, and we were advised to leave the country while we still had a chance. Accordingly we left by the first train the next day and were in Puerto Cabello that night. The journey was thru picturesque mountainous country, much of it being barren and sun-baked. The next day, by the rarest chance, I got an excursion boat sailing to Curacao, an island of the Dutch West Indies, while Dr. Dearborn pursued his labors a short time longer in Venezuela and took the first available steamer to New York.

Field Museum of Natural History, Chicago, Illinois.

THREE VIREOS: NESTING NOTES FROM THE HUACHUCA MOUNTAINS

By F. C. WILLARD

WITH THREE PHOTOS BY THE AUTHOR

ONE of the most interesting families of birds as home builders is that of the Vireos. Three representatives of this family nest in the Huachuca Mountains, the Plumbeous (*Lanivireo s. plumbeus*), Stephens (*Vireo h. stephensi*); and Western Warbling (*Vireosylva g. swainsoni*), named in the order of their abundance. It was my good fortune to make a rather intimate acquaintance with all three of these species during the season of 1908.

The Plumbeous largely outnumbers the other two. It is rarely found below an altitude of 6000 feet on the east slope and 4000 feet on the west, nesting from its lowest range to the summit where I have found nests at an altitude of over 9000 feet. Every canyon has a numerous line of the Plumbeous Vireo along its bottom with scattering pairs in all the small side canyons and on the ridges. The nests are usually close to the ground, frequently within reaching distance. Oaks, ash, maples and sycamores are selected as nesting sites. Each pair has its claim staked out and ejects all intruders of the same species, altho the other two species are unmolested by Plumbeus even when nesting in close proximity.

In nest building they go as far as a quarter of a mile for material. They feed closer to the nest, however, probably at not over half this distance. The female does all the nest-building but is assisted somewhat by the male in the duties of incubation. He also feeds his mate on the nest, but this is done rather infrequently. My present observations give the time at intervals of from twenty minutes to half an hour. When doing so he sings close by the nest after feeding her and this has helped me locate several. The male also sings when the nest is approached, and once this year I saw one sitting on the nest and singing. Toward evening the male frequently flies down close to the nest and sits within a few inches of it for long periods, being perfectly quiet and motionless all the time.

The nest is a very pretty cup-shaped affair as is usual with this family. It is composed of grass-tops woven into a frame work and filled in with oak down and greenish colored oak blossoms and bits of spiders web. The lining is of fine grass tops from which all the seeds have been removed. The general appearance of a

normal nest is greenish in color. One nest built in a sycamore was made entirely of white goat hair and fine grass. The hair hung down some inches in a fringe all over and made a handsome ornament. Being compelled to leave before the eggs were laid, I did not collect it.

Both parents are very brave when on the nest, the male more so than the female. A nest was found May 31, 1907. It was forty feet up in a maple, one of the few instances where the nest was placed well up from the ground. The female sat close as I worked with my rope trying to get within reach. Just as I was about to reach the nest the male flew down and the female relinquished her guard to him. He pecked my finger as I reached out, and settled down close into the nest. I poked him but he refused to leave and sat with mouth wide open ready to repel the invader. I tried slipping my finger under him but he did not budge. Then I took him by both sides of his open beak and lifted but he hung onto the bottom of



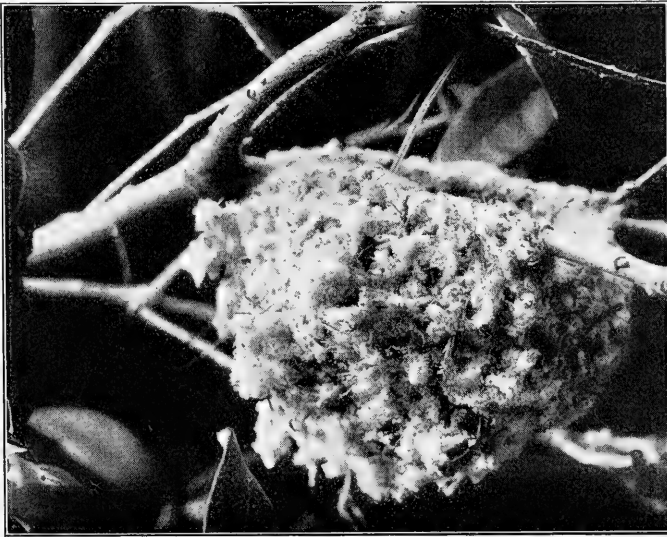
NEST OF THE PLUMBEOUS VIREO

the nest with his feet. Nonplused, I desisted for a few moments, debating how to get a view of the contents of the nest. While doing this he decided that he had done enough, hopped off, and flew into a neighboring tree. He deserved his treasures, so after one peep at the three eggs, I untied my ropes and descended.

On May 23, 1907, while ascending Ramsay Canyon in company with Mr. W. A. Johnson I stopped at a place where a Plumbeous was nearly always heard, but all was silent. I was about to move on when a couple of Long-crested Jays flew by into a clump of maples. Almost instantly the war-cry of the Vireos arose and, on hurrying to the spot, both birds were found fighting the Jays which soon took refuge in flight. A minute later, the female flew down into a small oak and hopped onto her nest which hung in plain sight some twelve feet from the ground and close to the trail. I was up that tree in a hurry and reached toward the nest, which she left at once. I could feel a nest full of eggs so began transferring them to my

mouth. There were still two eggs in the nest when I reached for the fourth. After placing it with its three counterparts I reached for the fifth supposing it would be a cowbird's. What a surprise and delight it was to bring forth another Vireo's egg. Five fresh eggs and such beauties. This was my first set of Plumbeous and the only one of five I have seen. Four is the usual number tho three eggs are not unusual. The proportion varies with the different years. I have not been in the field late enough to make any observations in connection with the young.

With the Stephens Vireo it is different as my observations always began with families of fullfledged young, and until this season, ended there, too. In speaking of Stephens Vireo the first thought is always of their song, if it can be dignified by such a name. It is like the mewing of a very small and lonely kitten repeated with even more energy, frequency and persistence. At times the "me-ow" is made more heart-rending, like a kitten in distress, the interval being slightly longer but the "me-ow" more drawn out and fuller in volume. The male will keep this up for minutes at a time, never pausing for breath. One was so persistent I timed him.



NEST OF THE STEPHENS VIREO

This series lasted thirteen and one-half minutes at the rate of one every second. This seems incredible but was actually timed by a watch. He sat still on the top of a madrone tree most of the time. The cadence scarcely varied at all. Twice he hopped to another perch but did not let the movement interrupt his song. The female does not have the same note but is restricted to the usual scolding note of the Vireos and a peculiar chirp which I am unable to describe and which she shares in common with the male. This last note was heard only around the nest or when feeding the young. The first brood of young is frequently flying by the 10th of May and they are fed by the parents until so well grown that it is impossible to tell them apart. The usual number of young seen at this time is three, tho once or twice I have counted four juveniles in one group.

On May 21, 1908, I was seated on a steep mountain side watching a Grace Warbler. There were a few large pine trees, some red oaks, and a scattering growth of oak brush, one clump of this being about thirty feet below me. A pair of Stephens Vireos flew into this and the female began arranging some nesting

material. Not enough had yet been placed to show up. The Grace Warbler was immediately forgotten in view of the more engaging prospects. The female was evidently using some cobweb. After it was placed to her satisfaction the male took a turn at re-arranging it. During all the time I watched him he did this and several times he brought material which he invariably dropped, none of it ever finding its way into the nest. On June 5 the female was sitting. She did not leave the nest until touched. The four eggs were slightly incubated. In size they compare very closely with the Western Warbling Vireo. They are considerably smaller than those of the Plumbeous. The spots are rather large, some larger than a pin head. They are not as black as the spots on either Western Warbling or Plumbeous, rather, a sienna brown.

The nest is a wonderful piece of bird architecture. It is composed of a frame work of fine grass holding together a thick mat of oak down almost as compact as



NEST OF THE WESTERN WARBLING VIREO

felt. The prongs of the fork are entirely covered with the down held on by cobwebs. There is a scanty lining of fine grass tops. As is the case with the Plumbeous, the seeds are all removed from the grass tops used in the lining. The nest has a yellowish appearance.

On May 22 another bird was seen building, the nest being almost completed, apparently. June 3rd no bird was around and June 12th, when I again visited it, the nest had entirely disappeared. Not a vestige was left. I climbed up to examine the fork where it had been and it was cleaned off completely. I feel sure they had moved the nest to some oak bush near by, but I could not locate it. Both these nests were about twelve feet from the ground, near the top of the same kind of oak brush.

On June 10th an intruding Jay helped me locate a nest with three well-feath-

ered young. This nest was in Carr Canyon and was placed at the top of a black oak sapling growing out of the side of the canyon. The nest was fifteen feet from the ground and seventy-five from the bed of the canyon which is very deep with precipitous walls. The male came with a caterpillar but seeing me would not go to the nest. The female, however, fed the young and brooded them without paying much attention to me.

The least common of the three Vireos breeding in the Huachuca Mountains is the Western Warbling Vireo. I have located but four pairs after visiting all the principal canyons, but there may be others in some of the smaller canyons. One pair is near the reservoir in Miller Canyon. I spent two hours on June 4, 1907, looking for their nest, climbing all the likely looking trees. The male got very uneasy at my continued presence and finally called his mate off the nest. She began calling with the usual Vireo alarm note and after locating her I watched very carefully for about ten minutes till she flew onto the nest, thirty feet up in a sycamore standing nearby on the edge of the creek. The nest was invisible from the ground and was well sheltered with leaves above. The female left the nest as I climbed up. There were four eggs with incubation begun. I secured good photographs of this nest and eggs.

On May 21, 1908, I was fortunate enough to locate a nest just begun. The two birds were together in the tree tops nearby all the time. The male was singing most of the time, the female responding from time to time with low notes which I cannot find syllables to describe. They were difficult to follow from tree to tree and it was sometime before I could tell where they were building. On June 1st the nest contained two eggs and June 4 I collected the nest and four eggs, taking photographs of them. The nest was placed in a fork near the top of a small ash growing well up from the bed of the canyon. The nest has the framework of grass tops like the two preceding species but the interwoven material is mostly a white parchment-like substance from the seed pods of the mescal. Bits of cobwebs complete the outside which is rather ragged in appearance and of a grayish white color. The lining is fine grass tops with the seeds removed as is the case with the other two.

The average measurements of the nests of the three species as shown by specimens in my possession are as follows:

Plumbeous Vireo: diameter, outside $3\frac{3}{4}$ inches; inside $2\frac{1}{4}$ inches.

Stephens Vireo: diameter, outside, $2\frac{3}{4}$ inches; inside $1\frac{1}{2}$ inches.

Western Warbling Vireo: diameter, outside $3\frac{1}{4}$ inches; inside 2 inches.

Plumbeous Vireo: depth, outside $2\frac{1}{2}$ inches; inside $1\frac{3}{4}$ inches.

Stephens Vireo: depth, outside $2\frac{1}{2}$ inches; inside $1\frac{3}{4}$ inches.

Western Warbling Vireo: depth, outside 2 inches; inside $1\frac{1}{2}$ inches.

Tombstone, Arizona.

NESTING OF THE PINE SISKIN AT GREAT SLAVE LAKE

By RUDOPH M. ANDERSON

THE Pine Siskin (*Spinus pinus*) appears to be a rather rare bird in the territory along the Athabasca, Slave and Mackenzie rivers. At least the writer met with the species on only one occasion during the season of 1908. On the morning of June 24, our party, on one of six scows and a York-boat, towed by the little steaming "Eva," pulled out of the delta of the Slave River, intending to cross the end of the lake to Hay River. A fairly strong wind was blowing from across the lake, causing heavy waves over the mud flats outside the mouth of the river,

and we were compelled to run on the lee side of Moose Island, and wait for the wind to subside. Moose Island is a high, rocky, stony island, about one and one-half miles long and three-fourths of a mile wide, a few miles from Fort Resolution, at the south-west corner of Great Slave Lake. The island is fringed with white spruce of good size; but the interior is high and rocky, covered with a tangle of burned and fallen spruce timber and sprinkled over with a sparse growth of young poplars.

A few Pine Siskins were seen in the spruce trees as we landed, and a few Chipping Sparrows (*Spizella passerina*) along the shores. The interior of the island revealed many Slate-colored Juncos (*Junco hyemalis*) and Intermediate Sparrows (*Zonotrichia l. gambeli*), one Black-poll Warbler's (*Dendroica striata*) nest with four eggs, one Sparrow Hawk, one Canada Jay (*Perisoreus canadensis*), and a small Flycatcher (*Empidonax*). White-throated Sparrows were fairly common, and a Spotted Sandpiper's (*Actitis macularia*) nest with four eggs was observed on the north shore of the island. Half a dozen Pine Siskins were observed at one time in the tops of spruce along the south shore.

After lunch I was resting under a white spruce, about one foot in diameter, near our campfire on the lake shore, when I saw a Pine Siskin fly into the tree directly above my head. Examining the tree carefully I soon saw the nest among the lower limbs of the tree, about fifteen feet from the ground, near the end of a small horizontal branch about two feet from the trunk of the tree. Both parent birds were about, and I shot the nearest, which proved to be the male. The other bird was unfortunately lost in the brush.

The nest contained three eggs, advanced in incubation; very pale blue in color, sparsely spotted at the larger end with light reddish brown. One of the eggs had on one side, near the smaller end a heavy comma-shaped streak about one-fourth of an inch long, and one other egg had a heavy, irregular line about the same size in a similar position; these streaks were deep umber-colored. The other egg had no large marks. The eggs also showed a very few minute black pin-point marks at their larger ends.

The nest was very neatly built, well-cupped and well-concealed by the very thick terminal twigs of the white spruce branch. Depth (outside), two and one-half inches; (inside) one and one-half inches. Diameter (external) two and one-half inches; (internal) one and one-half inches; composed of small dead spruce twigs, a few grasses, fibrous bark shreds, and a few shreds of cottony substance; lined with fine grass fibers and hair, mixed with a few bunches of moss fibers.

Herschel Island, N. W. T.

MR. ROCKWELL'S SUGGESTION OF COOPERATION IN ORNITHOLOGICAL STUDIES

By WILLIAM E. RITTER

I WAS interested in Mr. Rockwell's "Plan for Cooperative Ornithology" printed in the September CONDOR. A word should be spoken on this subject from the standpoint of general biology as well as from that of ornithology.

That there are more observers of the natural habits of birds than of any other group of animals is, I suppose, beyond question. As a result there is more accu-

ate knowledge pertaining to this aspect of these than of any other animals. A large portion of that knowledge is unpublished and hence available only for the observers themselves and their few personal acquaintances.

I wish to point out that this kind of knowledge is the very essence of analytical biology. True analysis in science begins with what is "given"—with the original data. Now the data of biology are the organisms, *the plants and the animals as they occur in nature*. We can learn much, very much, about animals by killing them and taking them to pieces to study their bodily parts; but nature does not give us dead animals to start with. They have to be living before they can be dead.

So, too, we can learn much about the ways of animals by studying confined—"tamed"—ones; but these again are not what nature furnishes in the first instance. The study of zoology must per force *begin* with the animals of the forests, the mountains, the plains, and the waters.

To leave generalities and come to practical matters, my main points are: (1) that steps ought to be taken to correlate the efforts of ornithologists and to put their results into more permanent and available form; and (2) that these steps should be taken from the standpoint and needs of general biology as well as of ornithology.

The carrying out of such a project would require much time, thought, labor and money; but the general lines on which it ought to run would seem tolerably obvious. A central board or bureau, not too large, but still thoroly representative, would be needed as the medium for general direction and final finishing-off of the real work, viz, that done in the field by the numerous individual observers.

This "thoroly representative" board would need to be made up somewhat as follows: Of one or more persons whose interests are birds first and foremost; of someone who has made animal psychology and behaviour generally, his main object of study; and of some one of the broadest possible biological horizon.

Besides these elements in the make-up of the board (which might be designated as professional), managerial, editorial and financiering skill would have to be secured in some way; that is, either as combined with the professional elements, or as independent elements.

I believe there are great possibilities in some such scheme, vague and cumbersome as it may look at first sight.

It is, however, not worth while to enter upon detailed discussions until there is evidence that it would appeal widely and easily to students of animate nature. It is too protean an idea to be realized thru the enthusiasm and push of one or a few persons, unless indeed unlimited time and perseverance were among the endowments of such persons.

University of California, Berkeley.

FROM FIELD AND STUDY

Louisiana Water-Thrush in California.—On August 17, 1908, while passing the time between trains at the station of Mecca, Riverside County, in search of the English Sparrow to determine its western progress along the Southern Pacific Route, I took an adult male of the Louisiana Water-Thrush (*Seiurus motacilla*) on the station ground among the water tank cars. Am I right in considering this a record case for the locality if not for the State?

Mecca is situated in the Salton sink at an elevation (?) of two hundred feet below the sea and within one and one-half miles of the present Salton Sea. The shores of Salton Sea are very bar-

ren at this point. The vegetation of the desert, saltbush (*Atriplex*) and mesquite (*Prosopis*) in scrubby form being the only vegetation noticeable except where the pumping plant of some rancher has made an oasis. At the station yard, however, a four inch well pipe has been sunk to a depth of eleven hundred and fifty feet where an artesian stratum was tapped which forces a gentle flow from the top of the pipe which overhangs the tank car siding. This small but constant leakage has nurtured a small grove of cottonwoods and a very limited tule patch.

The bird was first noted hopping about the trucks and platforms of the tank cars and was finally taken from the timbers of the tank support. The bird gave only its call note but this was heard repeatedly. The actions were those described by Chapman and others as being so characteristic. The teetering action and stout shanks remind one forcibly of the Dippers.

The bird flushed several times and seemed not at all shy tho restless as is its habit. Whether or not the same bird was seen each time is impossible to tell. Time did not permit very extensive or prolonged search after the one specimen was taken. Plumage was complete and testes inactive. The identification I feel to be unquestionable as the bird fits perfectly the careful description and measurements of Chapman in his "Warblers of North America."

It seems quite unusual to find this bird of the southeastern swamp and thicket so out of his sphere as to associate intimately with the Abert Towhee and Leconte Thrasher in the midst of a great south-western desert.

If our esteemed editor can assure me of this being a state record I shall be glad to deposit the specimen with the University Museum of Vertebrate Zoology where I consider such record specimens should be preserved.—LOVE HOLMES MILLER, *State Normal School, Los Angeles, Cal.*

[Yes; the specimen is unequivocally *Seiurus motacilla*, and establishes the first record for the species not only for California, but also as far as I know for the whole of the United States west of the Mississippi Valley. In accordance with Mr. Miller's generous offer, the skin has been added to the ornithological collection of the University of California Museum of Vertebrate Zoology, and is number 1105.—J. G.]

Late Nesting of the Green-backed Goldfinch.—On September 24, 1908, I took a set of four fresh eggs of the Green-backed Goldfinch from a cypress tree on one of our city streets, disturbing the parent bird from the nest. This seems to me a remarkable occurrence, as my latest previous date for nesting of the species was July 21.—C. S. SHARP, *Escondido, California.*

The Present Status of the Least Tern in Southern California.—I have noticed this season that the Least Tern (*Sterna antillarum*) seems to be on the increase at nearly all of the breeding grounds in Southern California.

The colony at Ballona Beach (this is the narrow strip of sand between Del Rey and Ocean Park) is nearly double what it was last year. As nearly as I could count, I should say that there were about 125 pairs of nesting birds. I watched this pretty closely, and do not think that more than ten per cent hatched because of the depredations of dogs mostly, and of small boys. This colony will surely disappear, and why the birds keep coming back I cannot see, as the whole thing (both island and mainland being cut up into building lots) is rapidly being built up with summer cottages. Some of the nests were not more than a hundred yards from the houses.

The Redondo Beach colony seems this year to be deserted. I noticed a few birds flying around, but no nests. This used to be a big colony, but the building of so many houses has driven the birds away.

The colonies at Bolsa Beach and Newport Beach were very thickly inhabited. The birds were there by the thousands, and I found it impossible to count them. The colony at Bolsa Beach is mostly within the grounds of the Bolsa Chica Gun Club and ought to increase every year, as the gun club people allow no one on the grounds. I should say that fully seventy-five per cent of the birds in this colony raised two or three broods.

The Newport Beach colony is split up into two or three main colonies, and this year a new one was started on a lot of reclaimed land. The land company had dredged the channels and filled a salt marsh up with the sand taken out where the channels were cut. This formed a nice white patch of sand and shells where the Terns made themselves perfectly at home. This colony probably succeeded in hatching sixty per cent of its eggs.

Both the Bolsa Beach and the Newport Beach colonies have increased about fifty percent over last year. The electric cars run directly thru the Bolsa Beach colony and the terns get so used to them that they very seldom leave their nests when a car passes.—W. LEE CHAMBERS, *Santa Monica, California*

Subspecific Names in the Genus *Passerella*.—According to the decision of the A. O. U. Committee, as stated in the Fourteenth Supplement (*Auk* XXV, July 1908, p. 395), the Fox Sparrow from Yakutat Bay should not be recognized in nomenclature as different from the Fox

Sparrow of Kadiak Island. In other words, *Passerella iliaca meruloides* (Vigors) [= *P. i. annectens* RIDGWAY] and *P. i. insularis* RIDGWAY are lumped together. To quote: "Both *annectens* and *meruloides* are believed to represent one form, which is inseparable from *P. i. insularis*". However that may be, it is certainly a mistake to discard the name *meruloides*, which has some sixty years priority over either of the other names and is without a shadow of a doubt applicable to the Yakutat form. (See CONDOR IV, March 1902, p. 45.)—J. GRINNELL, *Berkeley, California*.

Northern Range of the Phainopepla.—*Phainopepla nitens* has been recorded along the foothills of the Sierras at various places north as far as Marysville, but previous to my observations the northern limit in the Coast Range was Mt. Hamilton where R. H. Beck noted one bird in November, 1899, and Ernest Adams also recorded a bird from near the same place on October 28, 1898. Joseph Mailliard reports having heard their note in Marin County, but has never seen a bird.

On June 23, 1907, while in the Arroyo Mocho in southern Alameda County, I saw six of these birds which I took to be a family of four young and their parents. On April 1, 1908, near the same place I again saw a pair of Phainopeplas, but failed to secure either bird. Later in the year, however, while doing extended geological work in the Arroyo Mocho I again met with the birds several times, and I believed several pairs to have raised broods this last summer.

A number of birds were seen at dusk on July 21, 1908, and one young male of the year was taken, thus proving the birds to be breeding in Alameda County which probably marks their most northerly limit.—J. R. PEMBERTON, *Stanford University, California*.

Pacific Fulmars and Pacific Kittiwakes at Long Beach.—During February, 1908, I observed several Pacific Fulmars (*Fulmarus glacialis glupischa*), both light and dark phases, about the pleasure wharf at Long Beach, California. These birds were exceedingly tame, swimming about within a few inches of the numerous fish-lines and often making a dash for the baited hooks as the fishermen cast them. Upon tossing a handful of fish scraps overboard I was surprised to see the fulmars dive for the sinking pieces, sometimes going two or three feet under water and bouncing almost clear of the surface upon returning. They were also somewhat quarrelsome, fighting fiercely over a fish, uttering a harsh, rasping note the while. Several Pacific Kittiwakes (*Rissa t. pollicaris*) were also observed here.—C. B. LINTON, *Long Beach, Cal.*

The European Chaffinch at Berkeley, California.—On May 14, 1908, while passing a garden in Berkeley, near the corner of Prospect Street and Channing Way, my attention was attracted by an unfamiliar song, and on stopping to ascertain the source, I was surprised to see a European Chaffinch (*Fringilla coelebs*), in full plumage, singing cheerily in the lower branches of an acacia tree. The bird was not more than ten feet distant and repeated his song three times in full view, so that there was no mistake in identification. He had probably escaped from an aviary in the neighborhood but seemed to be as much at home as any of the native birds and, despite the raw, drizzling weather, was singing as merrily as a house finch. Notes of this kind are perhaps worth recording as they may be useful in future in tracing the introduction of foreign birds which may become acclimated in certain localities.—T. S. PALMER, *Washington, D. C.*

The California Record of the Cape Robin Open to Question.—I recently visited the home of Mr. W. Otto Emerson, at Haywards, California, and was accorded the privilege of closely examining several of the record specimens in his extensive private collection. I was particularly interested in scrutinizing the skin of "*Merula confinis*", upon which (and it alone) rests the inclusion of the Cape Robin as a bird of California. This bird is a female, No. 159 (Coll. W. O. E.), and was secured by Mr. Emerson himself at Haywards, January 7, 1882. It was first recorded in *Zoe*, Vol. I, April 1890, p. 46.

I was at once impressed with the similarity between it and certain pale female examples of the Western Robin. Mr. Emerson and I proceeded to analyze its characters. A male of true *confinis*, from Sierra de Laguna, lower California, was at hand for comparison. It was found that the Haywards bird, altho a female, was not so pale as the Lower California bird. The breast of the former showed a decided reddish caste, of the same quality as in females of ordinary *propinqua* tho not so deep. The head of the Haywards "*confinis*" was colored exactly as in female specimens of *propinqua*, the superciliary stripe being not continuous but broken as in the latter, and the feathers on the top of the head being decidedly black-centered, also as in the latter. The white area on the belly of the Haywards bird was found to be no more extensive than in female examples of *propinqua*, and the bills were identical in size, outline and color. The only character left, then, by which to identify the Haywards bird with true *confinis* was the decidedly ashy dorsal surface. But this, in absence of the other characteristics, Mr. Emerson and I agreed to be

insufficient in itself to warrant calling the bird *Merula confinis*. In other words, the Haywards "Cape Robin", is a pale individual extreme of the Western Robin (*Merula migratoria propinqua*).—J. GRINNELL, *Berkeley, California*.

Early Record for *Passerculus rostratus* in Los Angeles County.—On August 18, 1908, I secured a female *P. rostratus* in the marsh at Alamitos Bay, Los Angeles County, California. I observed two or three others on this date and by September 1 they were quite common.—C. B. LINTON, *Long Beach, California*.

Notes on the Western Gnatcatcher.—The Western Gnatcatcher (*Poliophtila cærulea obscura*) has appeared this summer over its breeding range in Central California in larger numbers than ever before, and has visited localities where previously unknown.

At Fyffe, El Dorado County, it had been noted by Barlow in June, but in no numbers. This year, however, it was a very common bird and no less than eight pairs of birds were observed nesting at Fyffe, and three sets of eggs were taken by H. W. Carriger and myself. Mr. Carriger in his three previous trips from Placerville to Fyffe had never seen a bird along the stage road, yet this year its note could be heard nearly everywhere, and seven specimens were taken over a range of twelve miles.

On March 22, 1908, near Point San Pedro, San Mateo County, I took a male gnatcatcher, thus making a record for this county.

In Alameda County, where observations were made over March, April, July and August, these birds were abundant nearly everywhere in the bushy regions and specimens of all ages were taken. Mr. W. Otto Emerson, probably the best posted man on Alameda County ornithology, can only report two instances of this bird having occurred in the county over a long period of years.

From the data thus taken from the widely separated localities mentioned, it would appear that the species has made a very large migration northward this last summer and I should like to hear of its occurrence in other localities this year.—J. R. PEMBERTON, *Stanford University, California*.



BOHLMAN AND FINLEY IN CAMP ON A FLOATING TULE ISLAND, DURING THEIR
EXPLORATION OF LOWER KLAMATH LAKE, SUMMER OF 1908

THE CONDOR

An Illustrated Magazine
of Western Ornithology

Published Bi-Monthly by the Cooper Ornithological Club of California.

JOSEPH GRINNELL, Editor, - Berkeley, Cal.
W. LEE CHAMBERS, Business Manager, Santa Monica, Cal.

WILLIAM L. FINLEY } Associate Editors
ROBERT B. ROCKWELL }

Hollywood, California: Published Nov. 25, 1908

SUBSCRIPTION RATES

One Dollar and Fifty Cents per Year in the United States, Mexico, and U. S. Colonies, payable in advance

Thirty Cents the single copy.

One Dollar and Seventy-five Cents per Year in all other countries in the International Postal Union.

Claims for missing or imperfect numbers should be made within thirty days of date of issue.

Subscriptions and Exchanges should be sent to the Business Manager.

Manuscripts for publication, and Books and Papers for review should be sent to the Editor.

Advertising Rates on application.

EDITORIAL NOTES

Again it becomes necessary to announce a change in the business management of THE CONDOR. Mr. Law finds it impossible for him to longer attend to the duties of this office, and Mr. W. Lee Chambers will henceforth take charge of our business affairs. Dues and subscriptions should therefore be remitted promptly to W. LEE CHAMBERS, SANTA MONICA, CALIFORNIA.

For preparing the 1908 Index appended to the present issue of THE CONDOR, we have to thank Mr. Henry B. Kaeding. The compilation of the yearly index is becoming more and more of an undertaking as our magazine grows. And it relieves the editorial department of a large amount of labor when someone outside assumes that part of the work and carries it to a satisfactory completion, as in the present instance.

The Birds of Washington, which Messrs. Dawson and Bowles have been working upon for the past four years is to go to press the first of the year, and finished copies are expected by May 1, 1909. This sumptuous work will be the most voluminous single publication which has yet appeared dealing solely with the birds of any part of the West. An admirable feature will be the reproductions from drawings and paintings by Allan Brooks, now conceded to be one of the foremost bird artists in the world.

The Ten-year Index is almost finished. Mr. Kaeding, who is devoting himself to this task, believes it will be ready to go to press by January 15th next. In our July number we laid the matter of financing the Ten-year Index before CONDOR readers. We have so far received just two responses to our invitation for donations to meet the cost of the publication (about \$100). These two replies were accompanied by three dollars, which leaves some \$97 still to collect! We wonder, after all, just how much the Ten-year Index is to be appreciated. One man is putting in hundreds of dollars worth of time on it, and two or three others will be donating their services in large measure before the thing is printed. To what extent is this undertaking of real importance to other Cooper Club members?

Mr. Austin Paul Smith has returned from Mexico and is now working with the birds on the U. S. side of the lower Rio Grande in the vicinity of Brownville, Texas.

Mr. H. E. Wilder, of Riverside, has been assisting Mr. H. S. Swarth in exploring the Trabuco region of southern California, in the interests of the University of California Museum.

Mr. William L. Finley of Portland, Oregon, left for New York the middle of October, and attended the annual meeting of the National Association of Audubon Societies on October 27th. He also attended the meeting of the American Ornithologists' Union at Cambridge, Mass., commencing November 16th.

Volume X of THE CONDOR consists of over 250 pages, by far the largest volume of our magazine yet issued. We believe the quality of the articles composing this volume to have never been exceeded. If our constituents approve of the efforts which have resulted as above, let them signify it by rendering their prompt and increased support to Volume XI, 1909.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

SEPTEMBER.—The Northern Division of the Cooper Ornithological Club met in the rooms of the Oakland Chamber of Commerce on the evening of September 12, President D'Evelyn in the chair. The minutes of the previous meeting were read and approved. Dr. Ella Cool Walker, 509 13th and Washington Sts., Oakland, Frank B. Rudolph, 523 10th Street, Oakland, Dr. Clarence E. Edwards, California Promotion Committee, San Francisco, and Annie M. Alexander, 1006 16th St., Oakland, were elected to active membership.

Dr. D'Evelyn read a short paper on the killing of a flock of swans by being swept over the Niagara Falls. The paper was discussed by the members present and numerous other instances of the same sort were reported.

A very interesting paper was read by Mr. Grinnell on the causes of bird migration. After the discussion on this paper the meeting adjourned.

H. W. CARRIGER, *Secretary pro tem.*

SOUTHERN DIVISION

SEPTEMBER.—The September meeting was called to order by Vice-President H. J. Lelande at his office in the City Hall, Los Angeles, Thursday evening, October 1, 1908, with members Henry B. Keading, Loye Holmes Miller, Howard Robertson, Alphonse and Antonin Jay, Otto Zahn, Pingree I. Osborn, Howard Wright and J. Eugene Law present.

The minutes of the last meeting, June 25, 1908, were read and approved. The application of Luther J. Goldman to reelection to active membership was presented by the Secretary.

A letter was read from Rudolph M. Anderson, who writes from Herschel Island, Northwest Territory, where he was on August 11, 1908, enroute to the more remote Arctic with an expedition sent by the American Museum of Natural History, New York City. He says in part: "I have had a splendid season's collecting, and made a few good photos. Among the sets taken along the line (proceeding northward from Alberta to Great Slave Lake) are Bohemian Wax-wing n-6, Pine Siskin n-3, Blackpoll Warbler n-4, White Pelican (at rookery at the Mountain Portage of Slave River) $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, Slate-colored Junco n-4, Montana Junco n-4, Olive-backed Thrush n-3, etc."

"I sent back about one hundred skins from Ft. Norman in July, and have just packed up fifty taken the past month between Ft. McPherson and this place. The latter lot included good series of Snowflakes, Lapland Longspurs, Horned Larks, Savanna Sparrows, both adults in moulting plumage and young in juvenile plumage. Took one specimen of Wheatear or Stone-chat, July 31. Have paid especial attention to juvenal and eclipse plumages.

"An interesting capture was a nest of four young Golden Eagles, just able to fly from nest on August 4th. The nest was on the face of a steep mud cliff near the sea on the west side of Herschel Island. The huskies told me that the eagles have nested there for several years. This may perhaps be near the bird's northern breeding range.

"The Pacific whaling fleet have so far failed to put in their expected appearance and we are short of necessary supplies, principally "grub", and have consequently been obliged to postpone our projected trip eastward to the Coppermine River country, until next summer, probably. We (Mr. Stefansson and myself) have two good 30-foot whaleboats, staunch sailing craft, have enlisted the services of several "huskies", and expect to cruise westward along the northwest coast of Alaska, probably starting tomorrow, hoping to find a good wintering place somewhere between Flaxman Island and the mouth of the Colville River. Possibly

we may work westward as far as Point Barrow. At present we have twenty-three dogs with voracious appetites and a great problem is to keep them fed. Fortunately fishing is good. We drew in 78 fair-sized whitefish at one haul of a 30-foot gill net this morning.

"I hope to get west as far as Flaxman Island before the latter part of this month, before the caribou leave the coast. At any rate we shall have some caribou shooting, as well as Alaska mountain sheep, this fall. Both these species are found near the north coast in fair numbers. I do not know whether this letter will get out by some whaler this summer or by the Dawson Patrol next winter."

As a matter of general interest to bird students, a small group of fossil bird bones was exhibited by Mr. Miller of the State Normal School. The specimens were recently found in quaternary deposits of Southern California and represent some large species of water birds.

The distal end of the humerus was shown in comparison to that of the white pelican and a coracoid in comparison with the same bone of the brown pelican. In the former case the fossil form exceeds the recent by a goodly margin, while in the latter case the fossil was double the mass of the recent form. A fragment of the beak of another form was also exhibited which shows, seemingly, relationship with the boatbilled storks.

Mr. Miller is assembling as large a collection of skeletal material of the larger birds as possible for the identification of such fossil remains and made an appeal to Cooper Club members to help in the establishment of such a collection in the community, where it will be at the disposal of all interested in comparative osteology.

The identity of fossils of game birds in fragments or of fragments of sea birds cast on the beach, sometimes becomes a matter of importance. The body bones of the condor and of golden eagles would be exceedingly valuable material for comparison in this special case.

The specimens shown are exceedingly suggestive of the avifauna that at one time existed here. They were found in company with the remains of the saber-toothed tiger, the giant ground sloth, mastodon and the camel. If these beasts once walked the plains about Los Angeles, what might not have been flying above their heads?

Mr. Pingree I. Osborn exhibited a pair of dark-colored Socorro Petrels and a pair of Cassin Auklets, with an egg of the latter, all taken at Coronado Islands, early in the summer. A very black hawk taken near La Jolla, Cal., on Sept. 11, 1908, was shown by Mr. Roth Reynolds. This proved to be the Zone-tailed Hawk. Adjourned.

J. EUGENE LAW, *Secretary*.

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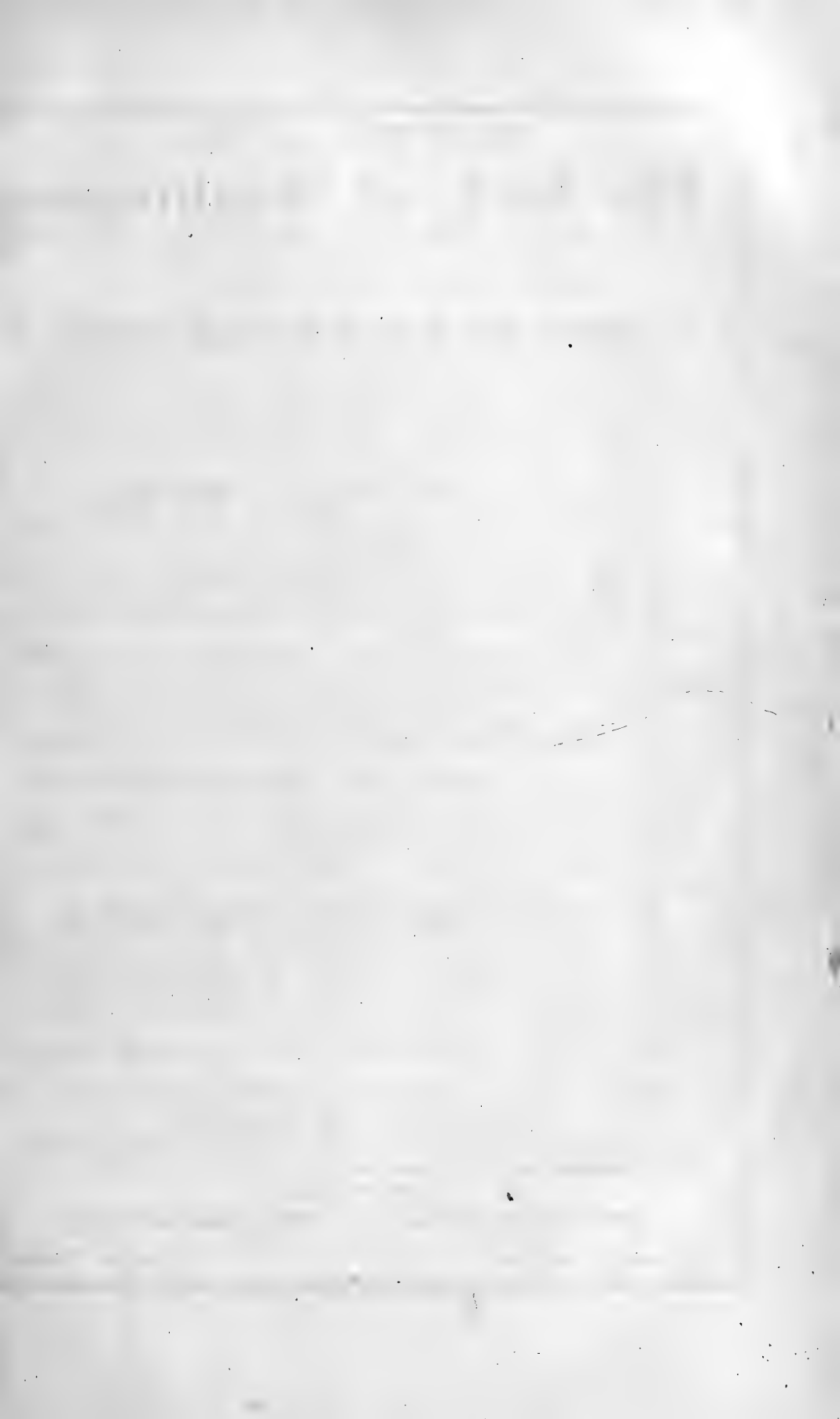
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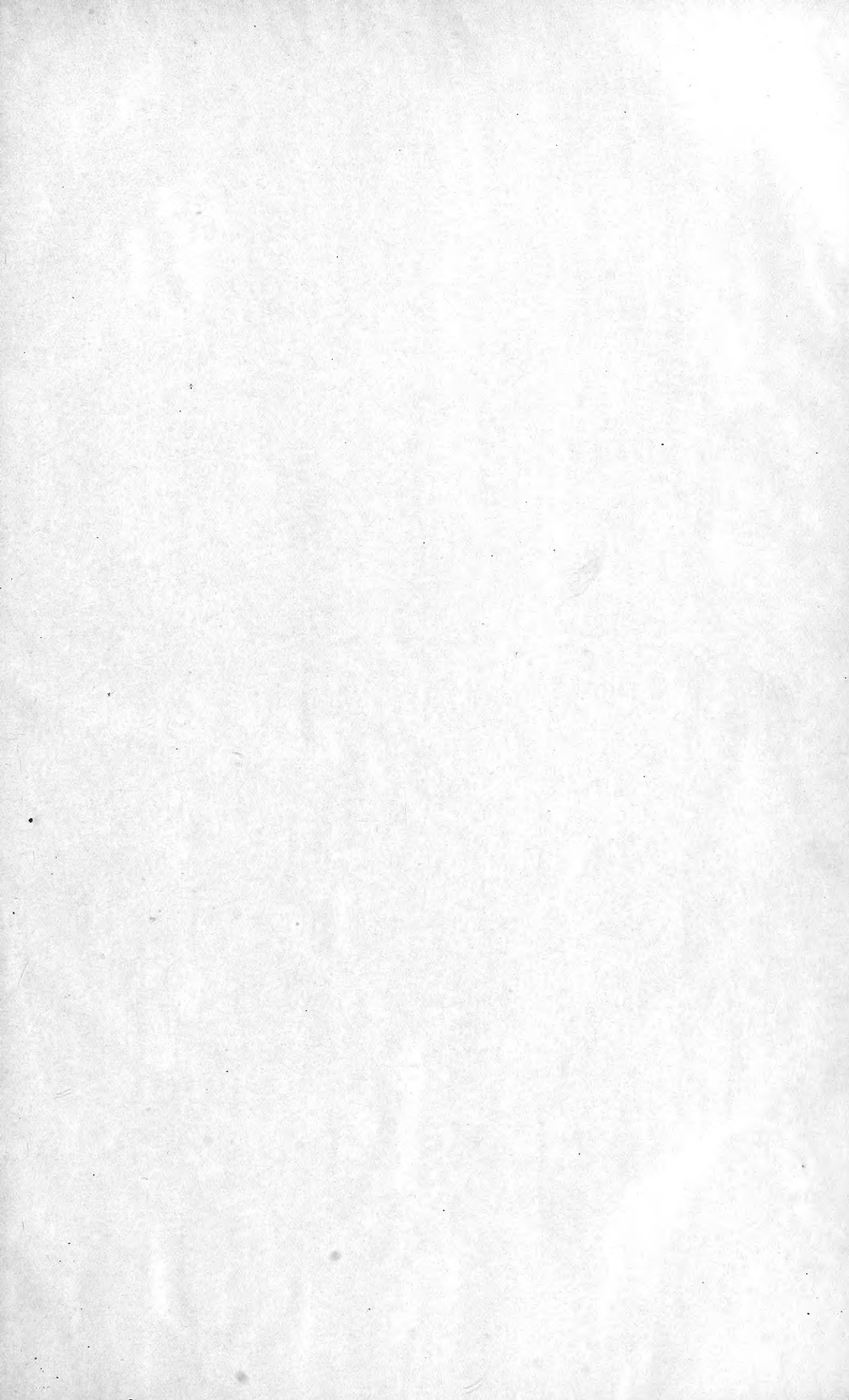
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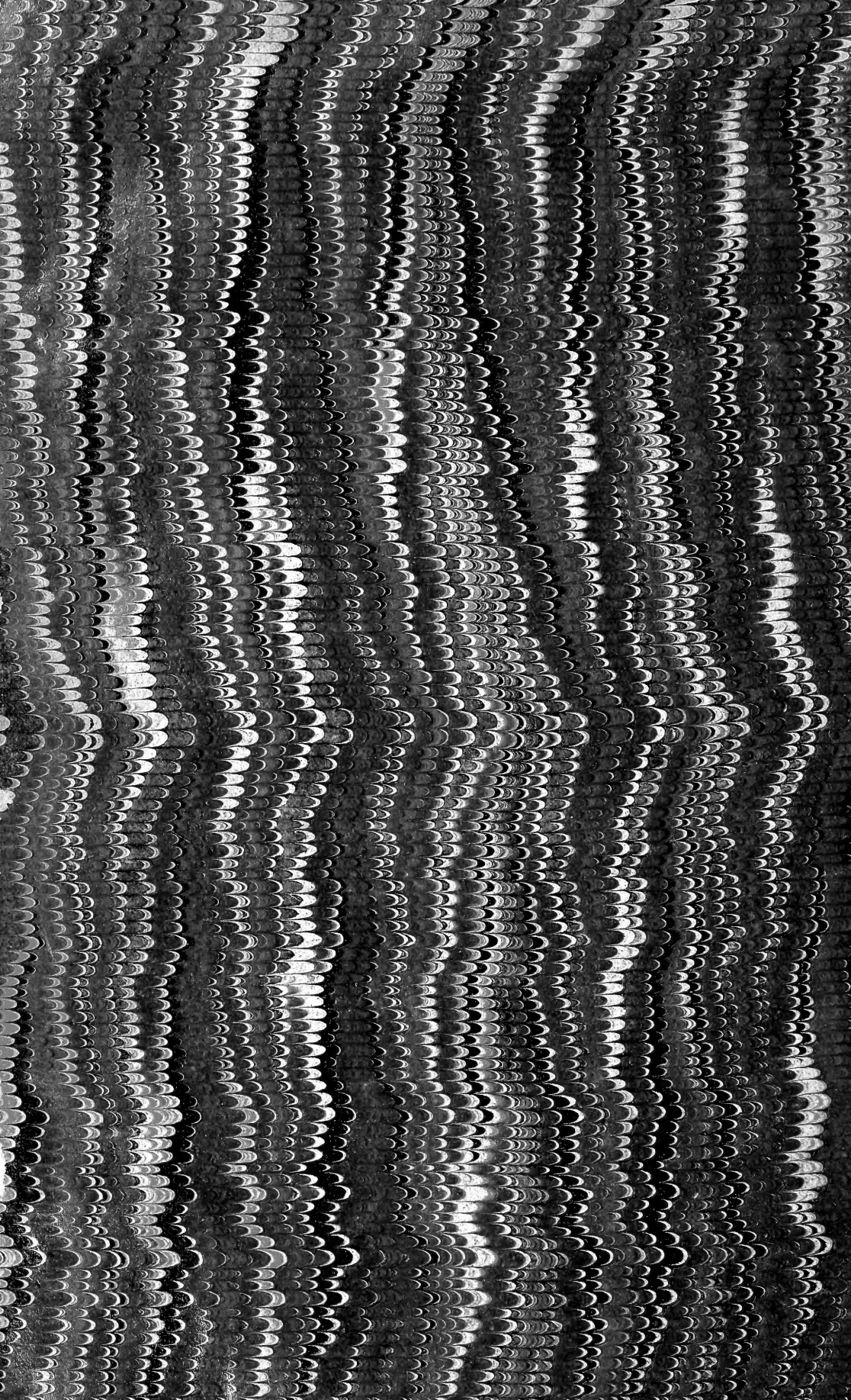
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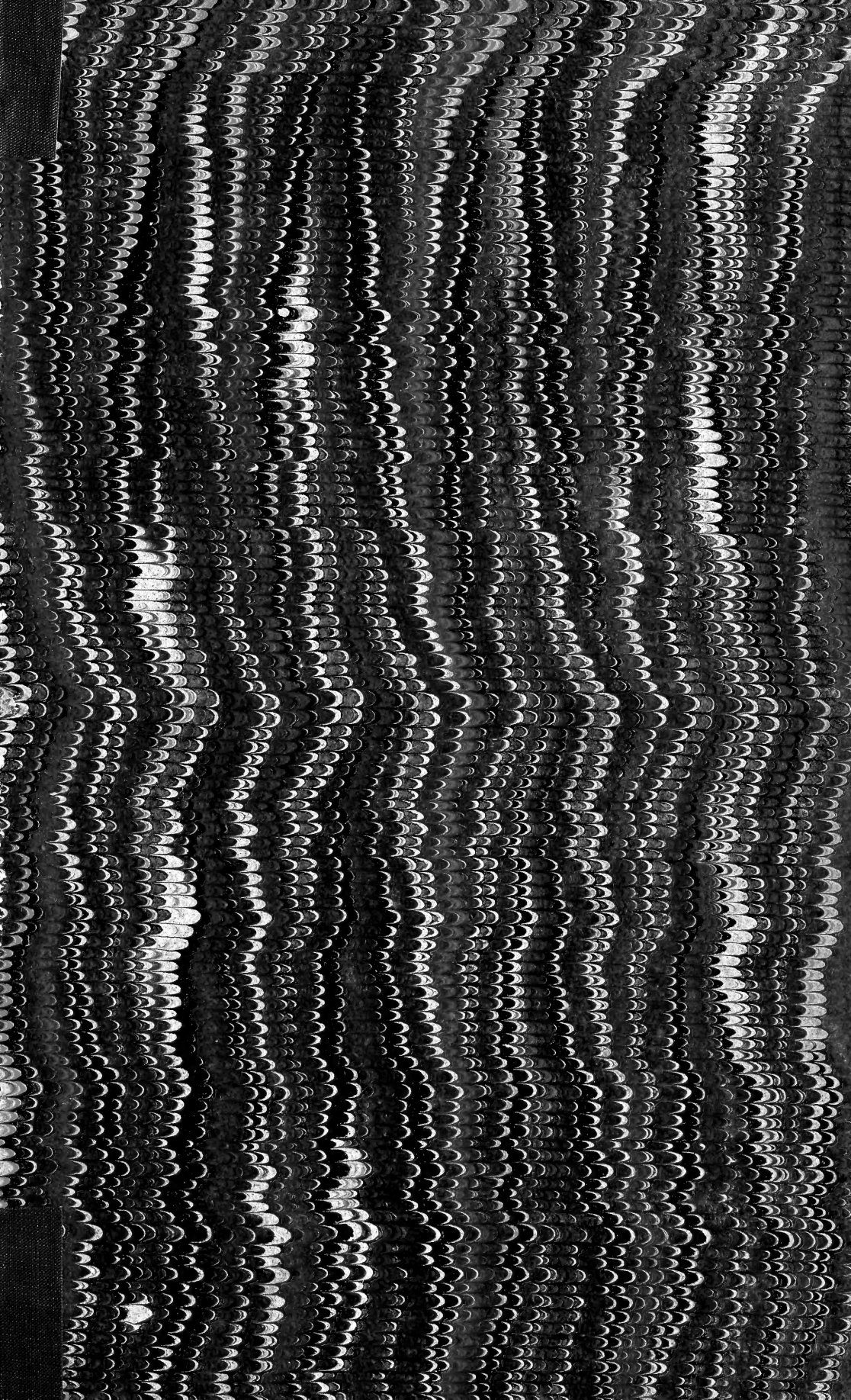
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